



STIC Search Report

EIC 3700

STIC Database Tracking Number: 195536

TO: Deborah L Malamud
Location: RND 5d68
Art Unit: 3766
Monday, July 17, 2006

Case Serial Number: 10/608409

From: Ethel Leslie
Location: EIC 3700
RND 8A34
Phone: 571-272-5992

Ethel.leslie@uspto.gov

Search Notes

Deborah,

Attached is the completed search for a method of determining the classification of an anti-arrhythmic drug. I searched the inventors in the patent as well as non-patent literature and the results are included. I did an extensive search on the requested topic in a number of bibliographic and full-text. I found a couple of items that I think might help you – they are marked with orange flags. Please be sure to look over all the results as there may be other items of interest. I have attached the search strategies used for the searches performed.

If you have a moment, please fill out the attached STIC Feedback Form. If there is anything I can do to refine or revise this search, please let me know.

Sincerely,
Ethel Leslie

RUSH

Access DB# 195536

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Deborah Malamud Examiner #: 81356 Date: 7/13/06
Art Unit: 3766 Phone Number 30 2-2106 Serial Number: 10/608,409
Mail Box and Bldg/Room Location: RND 5D 68 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.


Title of Invention: Method + apparatus for monitoring drug effects on cardiac electrical signals using an implantable cardiac stimulation device
Inventors (please provide full names): Peter Boreau, Janice Barstad, Gene A. Bonny, Kenny Bradley, Eric Falkenberg, Joseph J. Florin
Earliest Priority Filing Date: 26 June 03

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Claim 1 - method

- administering an antiarrhythmic drug
 - receiving patient cardiac signals via an implanted device
 - analyzing the signals to determine the effects of the drug
 - automatically controlling operation of the device based on analysis of signals
- * wherein analyzing the signal comprises determining the most likely class of ^{anti-}arrhythmic drugs taken by the patient

Class = Vaughn-Williams system, or other system of classifying drugs based on their effects on cardiac electrical signal


ROBERT E. PEZZUTO
SUPERVISORY PRIMARY EXAMINER

STAFF USE ONLY

Type of Search

Vendors and cost where applicable

Set	Items	Description
S1	1918	(ANTIARRHYTHMI? OR ANTI() (ARRHYTHMI? OR FIBRILLATE? OR DYS- RHYTHMI? OR TACHYCARDIA?) OR ANTIFIBRILLAT? OR ANTIDYSRHYTHMI? OR ANTITACHYCARDIA?) (5N) (DRUG OR DRUGS OR AGENT OR AGENTS OR THERAP? OR PHARMACEUT? OR PHARMACOLOG?) OR (CARDIAC? OR MYOCA- RD?) (2N)DEPR
S2	7527	PACEMAKER? OR PACE()MAKER? OR (IMPLANT? OR PROSTHE? OR IND- WELL?) (3N) (CARDIOVER? OR DEFIBRILLAT? OR CARDIOFIBRILLAT? OR - PUMP OR PUMPS) OR ICD
S3	80612	HEART OR CARDIAC? OR CARDIO????? OR ENDOCARD? OR MYOCARD? OR PERICARD?
S4	3714309	SIGNAL? OR OUTPUT?
S5	4522597	STIMULUS OR STIMULI OR STIMULAT??? OR CONTROL?
S6	148455	CLASS?? OR CLASSIFICATION? OR CLASSIFY OR CLASSIFIE? ? OR - SCHEME? ? OR SCHEMA
S7	6	(VAUGHN OR VAUGHAN) (N)WILLIAMS OR SICILIAN()GAMBIT
S8	426553	IC=(A61N? OR A61B? OR A61D? OR A61M?)
S9	70	S1 AND S2
S10	8	S9 AND S6
S11	4314	S3 (5N)S4
S12	16	S9 AND S11
S13	14	S12 NOT S10
S14	4868	S3 (5N)S5
S15	22	S9 AND S14
S16	12	S15 NOT (S10 OR S13)
S17	1186	S6 (5N) (DRUG OR DRUGS OR AGENT OR AGENTS OR PHARMACEUT? OR - PHARMACOLOG?)
S18	145	S1 AND S17
S19	2	S18 AND (S11 OR S14)
S20	3	(S18 NOT (S10 OR S13 OR S16 OR S19)) AND S8
S21	31	S1(S)S2
S22	16	S21 NOT (S10 OR S13 OR S16 OR S19 OR S20)

? show files

File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)

(c) 2006 JPO & JAPIO

File 350:Derwent WPIX 1963-2006/UD=200644

(c) 2006 The Thomson Corp.

?

WPI Acc No: 1992-066603/199209

XRPX Acc No: N92-050014

Implanted programmable ambulatory heartbeat signal monitor - senses heartbeat signals with subcutaneous sensor located remote from heart, and detects and reports heart abnormality

Patent Assignee: TELETRONICS NV (TELE-N); TELETRONICS PACING SYSTEMS INC (TELE-N)

Inventor: DAWSON A K; HURSTA W N; NAPPHOLZ T A; STEINHAUS B M

Number of Countries: 004 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 472411	A	19920226	EP 91307673	A	19910821	199209 B
US 5113869	A	19920519	US 90570379	A	19900821	199223

Priority Applications (No Type Date): US 90570379 A 19900821

Cited Patents: EP 1708; EP 209804; GB 2060174; US 3212496; US 3823708; US 4146029; US 4318412

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 472411	A				

Designated States (Regional): DE FR GB

US 5113869 A 24 A61N-001/05

Abstract (Basic): EP 472411 A

A programmable ambulatory electrocardiography monitor (10) is subcutaneously implanted at a position remote from the heart which permits optimum diagnosis of ST segment signals. The sensed heartbeat signals are continuously analysed by the moritor, and the stored results transmitted (15) in burst to external circuitry.

When the analysis indicates a hear abnormality the monitor transmits a warning signal and ectivatus a patient alarm (30). The monitor may control an external **pacemaker** , defibrillator, or infusion pump.

ADVANTAGE - Continuous long term monitoring, with warning of malignant cardiac arrhythmias, and analysis of effects of drugs.

Dwg.10/14

Title Terms: IMPLANT; PROGRAM; AMBULATORY; HEART; SIGNAL; MONITOR; SENSE; HEART; SIGNAL; SUBCUTANEOUS; SENSE; LOCATE; REMOTE; HEART; DETECT; REPORT ; HEART; ABNORMAL

Derwent Class: P31; P34; S05

International Patent Class (Main): A61N-001/05

International Patent Class (Additional): A61B-005/07

File Segment: EPI; EngPI

13/5/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008743265 **Image available**

WPI Acc No: 1991-247281/199134

XRPX Acc No: N91-188547

Automatically controlled implantable pacemaker - responds to ventricular pressure and examination of electrogram to determine and control required therapy

Patent Assignee: TELETRONICS NV (TELE-N)

Inventor: COLLINS K A

Number of Countries: 009 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 442601	A	19910821	EP 91300124	A	19910108	199134 B

10/5/1 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

017717772 **Image available**
WPI Acc No: 2006-229043/200624
Related WPI Acc No: 2003-660836; 2003-660837; 2005-656910
XRPX Acc No: N06-196517

**Cardiac rhythm management device e.g. pacemaker , for treating
arrhythmia, has controller with classifier classifying detected
arrhythmia and selecting therapies based on history of success of
selected therapies**

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N)
Inventor: KRAMER A P; SPINELLI J C; STAHMANN J E; ZHU Q
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20060052830	A1	20060309	US 200127800	A	20011220	200624 B
			US 2005125501	A	20050510	
			US 2005268284	A	20051103	

Priority Applications (No Type Date): US 200127800 A 20011220; US
2005125501 A 20050510; US 2005268284 A 20051103

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20060052830	A1	15	A61N-001/39		Cont of application US 200127800 Cont of application US 2005125501 Cont of patent US 6909916

Abstract (Basic): US 20060052830 A1

NOVELTY - The system has a detector (110) with a detector circuit detecting depolarization, and a controller with an arrhythmia detector module detecting an arrhythmia based on the depolarization information. The controller has an arrhythmia **classifier** (124) to **classify** the detected arrhythmia, and selects stimulation therapies to treat arrhythmia based on a history of success of the selected therapies at treating arrhythmia.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for operating a cardiac device.

USE - Cardiac rhythm management device e.g. **pacemaker** , cardiac resynchronization therapy device and defibrillator, for delivering pace pulses to a heart of a patient to treat arrhythmia.

ADVANTAGE - The controller with the arrhythmia **classifier** **classifies** the arrhythmia and selects electrodes for effectively delivering **antiarrhythmia therapy** using the **classification** .

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of a cardiac rhythm management system.

Remote interface (106)
Telemetry circuit (108)
Detector (110)
Controller (114)
Energy output circuit (118)
pp; 15 DwgNo 1/7

Title Terms: CARDIAC; RHYTHM; MANAGEMENT; DEVICE; **PACEMAKER** ; TREAT;
ARRHYTHMIC; CONTROL; **CLASSIFY** ; **CLASSIFY** ; DETECT; ARRHYTHMIC; SELECT;
BASED; HISTORY; SUCCESS; SELECT

Derwent Class: P34; S05; T01

International Patent Class (Main): A61N-001/39

File Segment: EPI; EngPI

10/5/2 (Item 2 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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017333269 **Image available**
WPI Acc No: 2005-656910/200567
Related WPI Acc No: 2003-660836; 2003-660837; 2006-229043
XRPX Acc No: N05-538166

Cardiac rhythm management device for pacer, has classifier module classifying arrhythmia into classification, therapy map providing antiarrhythmia therapy corresponding to classification, and control signal delivering therapy

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N)
Inventor: KRAMER A P; SPINELLI J C; STAHMANN J E; ZHU Q
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20050203581	A1	20050915	US 200127800	A	20011220	200567 B
			US 2005125501	A	20050510	

Priority Applications (No Type Date): US 200127800 A 20011220; US 2005125501 A 20050510

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20050203581	A1	15	A61N-001/362	Cont of application US 200127800	Cont of patent US 6909916

Abstract (Basic): US 20050203581 A1

NOVELTY - The device has a controller coupled to a cardiac signal detector (110) and an energy output circuit (118). The controller has an arrhythmia detector (122) module detecting an arrhythmia. An arrhythmia **classifier** module **classifies** the detected arrhythmia into an arrhythmia **classification**. A **therapy** map provides an **antiarrhythmia therapy** corresponding to the **classification**, and control signal delivers a selected therapy.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a machine-assisted method comprising detecting an arrhythmia.

USE - Used in a cardiac rhythm management device e.g. cardiac **pacemaker**, pacer, cardiac resynchronization therapy (CRT) device, defibrillator, for improving rhythm and/or spatial coordination of heart contractions of a patient.

ADVANTAGE - The device efficiently provides **classification** of arrhythmia, and guides a choice and/or nature of the antitachyarrhythmia therapy and its delivery to a patient to interrupt a tachyarrhythmia.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of a cardiac rhythm management system.

Cardiac signal detector (110)

Energy output circuit (118)

Power source (120)

Arrhythmia detector (122)

Arrhythmia **classifier** (124)

pp; 15 DwgNo 1/7

Title Terms: CARDIAC; RHYTHM; MANAGEMENT; DEVICE; PACE; **CLASSIFY**; MODULE; **CLASSIFY**; ARRHYTHMIC; **CLASSIFY**; THERAPEUTIC; MAP; THERAPEUTIC; CORRESPOND; **CLASSIFY**; CONTROL; SIGNAL; DELIVER; THERAPEUTIC

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/362

File Segment: EPI; EngPI

10/5/3 (Item 3 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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013750762 **Image available**

WPI Acc No: 2001-234991/200124

XRPX Acc No: N01-168043

Operating implantable cardioverter / defibrillator with antitachycardia pacing capability, involves reducing fibrillation detection zone boundary if antitachycardia pacing fails to terminate arrhythmia

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N)

Inventor: KENKNIGHT B H; MANICKA Y; SUN W; TZE M

Number of Countries: 022 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200113993	A1	20010301	WO 2000US22642	A	20000817	200124 B
US 6230055	B1	20010508	US 99378591	A	19990820	200128
AU 200067832	A	20010319	AU 200067832	A	20000817	200136

Priority Applications (No Type Date): US 99378591 A 19990820

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200113993	A1	E	20	A61N-001/362	
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Designated States (National): AU CA JP

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU
MC NL PT SE

US 6230055	B1	A61N-001/37
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AU 200067832	A	A61N-001/362	Based on patent WO 200113993
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Abstract (Basic): WO 200113993 A1

NOVELTY - The method involves reducing fibrillation detection zone boundary if the antitachycardia pacing fails to terminate an arrhythmia **classified** as a tachycardia. The **antitachycardia pacing therapy** is delivered if the arrhythmia is **classified** as tachycardia.

DETAILED DESCRIPTION - A cardiac arrhythmia is first detected by measuring the heart rate and determining if the measured heart rate is above a selected arrhythmia threshold value. The arrhythmia is **classified** as a tachycardia or a fibrillation if the heart rate is below or above the selected fibrillation detection zone boundary, respectively. An INDEPENDENT CLAIM is also included for the **implantable cardioverter / defibrillator** with antitachycardia pacing capability.

USE - For operating an **implantable cardioverter / defibrillator** with antitachycardia pacing capability. Used in discriminating between tachycardia and fibrillation, and determining appropriate therapy.

ADVANTAGE - Adaptively adjusted based on therapy outcomes detected by the **implantable cardioverter / defibrillator**. Varies values of fibrillation detection zone boundary, boundary zone limits and soft zone limits in accordance with measured heart rate stability to further aid in discrimination between tachycardia and fibrillation. Discriminates tachycardia and fibrillation using heart rate variability or heart rate stability.

DESCRIPTION OF DRAWING(S) - The figure shows the system diagram of a microprocessor-based **implantable cardioverter / defibrillator** with antitachycardia pacing capability.

pp; 20 DwgNo 1/3

Title Terms: OPERATE; IMPLANT; CARDIOVERTER; DEFIBRILLATE; PACE; CAPABLE;

REDUCE; FIBRILLATE; DETECT; ZONE; BOUNDARY; PACE; FAIL; TERMINATE;
ARRHYTHMIC
Derwent Class: P34; S05; T01
International Patent Class (Main): A61N-001/362; A61N-001/37
International Patent Class (Additional): A61N-001/39
File Segment: EPI; EngPI

10/5/4 (Item 4 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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012522808 **Image available**
WPI Acc No: 1999-328914/199928
XRPX Acc No: N99-246803

Implantable cardioversion and defibrillation device
Patent Assignee: PACESETTER INC (PACE-N)
Inventor: MURPHY T; MURPHY A
Number of Countries: 026 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 919256	A1	19990602	EP 98306451	A	19980813	199928 B
US 5951592	A	19990914	US 97975308	A	19971121	199944
EP 919256	B1	20020417	EP 98306451	A	19980813	200227
DE 69804927	E	20020523	DE 604927	A	19980813	200241
			EP 98306451	A	19980813	

Priority Applications (No Type Date): US 97975308 A 19971121

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 919256	A1	E	9	A61N-001/39	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
US 5951592	A			A61N-001/39	
EP 919256	B1	E		A61N-001/39	
Designated States (Regional): DE ES FR IT NL					
DE 69804927	E			A61N-001/39	Based on patent EP 919256

Abstract (Basic): EP 919256 A1

NOVELTY - The device has a cardiac sensor and a categorizer to distinguish between two heart rates. Two generators generate therapeutic signals. A ventricular detector detects stability from the variability of ventricular intervals. A controller generates a first command to activate the first generator if a first heart rate or ventricular stability is detected and a second command to activate the second generator if the ventricle is unstable.

USE - Applying **antitachycardia** or antibradycardia therapy based on ventricular rate and stability (Claimed).

ADVANTAGE - Determines the required therapy based on the heart signals. Reduces the incidence of acceleration caused by application of orthorhythmic antitachycardia with incorrect estimates. Safely allows antitachycardia at cycle lengths as short as 200 ms, without risking inappropriate therapy for ventricular fibrillation. Reduces delay to shock therapy caused by application of **antitachycardia** to polymorphic VT or VF.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of the invention.

sensing circuit (12)
Pacing pulse generator (14)
defibrillating pulse generator (16)
Lead system (18)

Microprocessor (24)
 ventricular rate classifier (28)
 pp; 9 DwgNo 1/3
 Title Terms: IMPLANT; DEFIBRILLATE; DEVICE
 Derwent Class: P34; S05; T01
 International Patent Class (Main): A61N-001/39
 International Patent Class (Additional): A61N-001/362
 File Segment: EPI; EngPI

10/5/5 (Item 5 from file: 350)
 DIALOG(R)File 350:Derwent WPIX
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010886583 **Image available**
 WPI Acc No: 1996-383534/199638
 Related WPI Acc No: 1998-008606; 1999-104937; 2000-022898; 2001-059742;
 2001-528584; 2002-089197; 2003-670808
 XRPX Acc No: N96-323302

Prioritised rule based device for arrhythmias diagnosis and treatment - detects and classifies arrhythmias of heart, and delivers therapy, using arrhythmia classification based on set of prioritized rules, each defining criteria based upon characteristics of sensed depolarizations of heart tissue

Patent Assignee: MEDTRONIC INC (MEDT)
 Inventor: KAEMMERER W F; OLSON W H; KAEMMERER F; OLSON H
 Number of Countries: 022 Number of Patents: 015

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5545186	A	19960813	US 95413570	A	19950330	199638	B
WO 9630081	A1	19961003	WO 96US4048	A	19960326	199645	
AU 9654299	A	19961016	AU 9654299	A	19960326	199706	
AU 695634	B	19980820	AU 9654299	A	19960326	199845	
JP 11503038	W	19990323	JP 96529569	A	19960326	199922	
			WO 96US4048	A	19960326		
EP 939660	A1	19990908	EP 96911400	A	19960326	199941	
			WO 96US4048	A	19960326		
CA 2215899	C	20011030	CA 2215899	A	19960326	200203	
			WO 96US4048	A	19960326		
EP 1179355	A1	20020213	EP 96911400	A	19960326	200219	
			EP 2001127756	A	19960326		
EP 939660	B1	20030212	EP 96911400	A	19960326	200313	
			WO 96US4048	A	19960326		
			EP 2001127756	A	19960326		
DE 69626227	E	20030320	DE 96626227	A	19960326	200327	
			EP 96911400	A	19960326		
			WO 96US4048	A	19960326		
EP 1179355	B1	20040526	EP 96911400	A	19960326	200435	
			EP 2001127756	A	19960326		
DE 69632601	E	20040701	DE 96632601	A	19960326	200443	
			EP 2001127756	A	19960326		
DE 69632601	T2	20050623	DE 96632601	A	19960326	200541	
			EP 2001127756	A	19960326		
JP 2006068549	A	20060316	JP 96529569	A	19960326	200621	
			JP 2005325780	A	20051110		
JP 3768535	B2	20060419	JP 96529569	A	19960326	200628	
			WO 96US4048	A	19960326		

Priority Applications (No Type Date): US 95413570 A 19950330
 Cited Patents: EP 253505; EP 292351; EP 617980; EP 626182; US 4799493; US 5086772; US 5184615; US 5193535; US 5330508; WO 9302746; WO 9419054

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5545186	A		24	A61N-001/368	
WO 9630081	A1	E	50	A61N-001/365	
Designated States (National): AU CA JP					
Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
AU 9654299	A			A61N-001/365	Based on patent WO 9630081
AU 695634	B			A61N-001/365	Previous Publ. patent AU 9654299
Based on patent WO 9630081					
JP 11503038	W		69	A61N-001/365	Based on patent WO 9630081
EP 939660	A1	E		A61N-001/365	Based on patent WO 9630081
Designated States (Regional): CH DE FR GB IT LI NL SE					
CA 2215899	C	E		A61N-001/365	Based on patent WO 9630081
EP 1179355	A1	E		A61N-001/365	Div ex application EP 96911400
Div ex patent EP 939660					
Designated States (Regional): CH DE FR GB IT LI NL SE					
EP 939660	B1	E		A61N-001/365	Related to application EP 2001127756
Related to patent EP 1179355					
Based on patent WO 9630081					
Designated States (Regional): CH DE FR GB IT LI NL SE					
DE 69626227	E			A61N-001/365	Based on patent EP 939660
Based on patent WO 9630081					
EP 1179355	B1	E		A61N-001/365	Div ex application EP 96911400
Div ex patent EP 939660					
Designated States (Regional): CH DE FR GB IT LI NL SE					
DE 69632601	E			A61N-001/365	Based on patent EP 1179355
DE 69632601	T2			A61N-001/365	Based on patent EP 1179355
JP 2006068549	A		34	A61N-001/39	Div ex application JP 96529569
JP 3768535	B2		31	A61N-001/365	Previous Publ. patent JP 11503038
Based on patent WO 9630081					

Abstract (Basic): US 5545186 A

The implantable antiarrhythmia device detects and **classifies** arrhythmias of the human heart, and delivers appropriate therapy. The device uses arrhythmia **classification** based on a set of prioritized rules, each of the rules defining a number of criteria based upon characteristics of sensed depolarizations of heart tissue.

Each rule is met when the criteria associated with the rule are met. Some rules, when met, trigger delivery of **antiarrhythmia therapy**. Other rules, when met, inhibit delivery of **antiarrhythmia therapy**. The rules may be met simultaneously, and if so, the highest priority rule governs the behaviour of the device.

USE/ADVANTAGE - **Pacemakers**, defibrillators and cardioverters. Facilitates distinguishing of various tachyarrhythmias, and providing appropriate therapies to treat identified tachyarrhythmias.

Dwg.11/11

Title Terms: RULE; BASED; DEVICE; ARRHYTHMIC; DIAGNOSE; TREAT; DETECT; **CLASSIFY**; ARRHYTHMIC; HEART; DELIVER; THERAPEUTIC; ARRHYTHMIC; **CLASSIFY**; BASED; SET; RULE; DEFINE; CRITERIA; BASED; CHARACTERISTIC; SENSE; HEART; TISSUE

Derwent Class: P31; P34; S05; T01

International Patent Class (Main): A61N-001/365; A61N-001/368; A61N-001/39

International Patent Class (Additional): A61B-005/0402

File Segment: EPI; EngPI

10/5/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009505196 **Image available**

WPI Acc No: 1993-198732/199325

XRPX Acc No: N93-152907

Anti-arrhythmia pacemaker for stimulating patients heart and skeletal muscle graft for augmenting heart performance - detects and classifies abnormal heart condition e.g tachycardia or fibrillation and uses stimulator to deliver pulse train to electrode in contact with muscle.

Patent Assignee: TELETRONICS NV (TELE-N); TELETRONICS PACING SYSTEMS INC (TELE-N)

Inventor: COLLINS K A

Number of Countries: 007 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 547733	A2	19930623	EP 92306759	A	19920723	199325 B
US 5251621	A	19931012	US 91809913	A	19911218	199342
EP 547733	A3	19950111	EP 92306759	A	19920723	199538
EP 547733	B1	19980415	EP 92306759	A	19920723	199819
DE 69225118	E	19980520	DE 625118	A	19920723	199826
			EP 92306759	A	19920723	

Priority Applications (No Type Date): US 91809913 A 19911218

Cited Patents: No-SR.Pub; EP 469817; US 4735205; US 4799493; WO 9108007; WO 9206738

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 547733	A2	E	31	A61N-001/36	
Designated States (Regional): DE FR GB IT NL SE					
US 5251621	A		28	A61N-001/368	
EP 547733	B1	E	33	A61N-001/36	
Designated States (Regional): DE FR GB IT NL SE					
DE 69225118	E			A61N-001/36	Based on patent EP 547733
EP 547733	A3			A61N-001/36	

Abstract (Basic): EP 547733 A

The **pacemaker** stimulates a patients heart that includes skeletal muscle grafted to the cardiovascular system of the patient to assist cardiac functions and includes an arrangement for detecting and classifying occurrences of abnormal conditions. The abnormal condition is of the heart (11) and is selected from the group comprising tachycardia, fibrillation and precursors of such tachycardia and fibrillation. A heart stimulator (17) is provided to generate and deliver pulses.

At least one muscle stimulation electrode (12) is adapted to be placed in electrical contact with the muscle. A muscle pulse stimulating part (20) is electrically coupled to the electrode to deliver the pulse train of sufficient energy.

ADVANTAGE - Increases cardiac perfusion during arrhythmia episodes to ameliorate ischemia and avoid aggravation.

Dwg.1/13

Title Terms: ANTI; ARRHYTHMIC; **PACEMAKER** ; STIMULATING; PATIENT; HEART; SKELETON; MUSCLE; GRAFT; AUGMENT; HEART; PERFORMANCE; DETECT; **CLASSIFY** ; ABNORMAL; HEART; CONDITION; TACHYCARDIA; FIBRILLATE; STIMULATING; DELIVER ; PULSE; TRAIN; ELECTRODE; CONTACT; MUSCLE

Derwent Class: P34; S05; T01

International Patent Class (Main): A61N-001/36; A61N-001/368

International Patent Class (Additional): A61N-001/365; A61N-001/39

File Segment: EPI; EngPI

10/5/7 (Item 7 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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009358992 **Image available**

WPI Acc No: 1993-052471/199306

XRPX Acc No: N93-040103

**Device for measuring haemodynamic compromise in both ventricles of heart
- determines changes in normal variations of transcardiac impedance
between defibrillation patches positioned on outer surface of heart**

Patent Assignee: TELETRONICS PACING SYSTEMS INC (TELE-N)

Inventor: WEISS S M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5179946	A	19930119	US 90617987	A	19901126	199306 B

Priority Applications (No Type Date): AU 898038 A 19891228

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5179946	A	21	A61N-001/39	

Abstract (Basic): US 5179946 A

The **implantable** device employs **defibrillation** patch electrodes positioned on the outer surface of the heart generally outwardly of the left and right ventricles of the heart, in conjunction with a non-polarising sub-threshold constant current or constant voltage signal and appropriate electronic signal sensing and processing circuitry, to determine changes in variations of the transcardiac impedance of a patient's heart. The changes are representative of corresponding changes in the level of haemodynamic compromise of the heart.

Bradycardia support pacing **therapy** , **antitachycardia** placing **therapy** , cardioversion **therapy** and defibrillation therapy, or no therapy, are selectively initiated by the device, depending on the level of haemodynamic compromise determined by the device. Conventional electrical function sensing may be employed in conjunction with the sensed changes in variations of the transcardiac impedance to control the device.

USE - **Classifies** and detects tachyarrhythmias according to discrete levels of haemodynamic compromise sensed by device, and delivers appropriate antitachyanhythmia therapy.

s h

Dwg.1/10A

Title Terms: DEVICE; MEASURE; HAEMODYNAMIC; COMPROMISE; VENTRICLE; HEART;
DETERMINE; CHANGE; NORMAL; VARIATION; IMPEDANCE; DEFIBRILLATE; PATCH;
POSITION; OUTER; SURFACE; HEART

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/39

International Patent Class (Additional): A61N-001/368

File Segment: EPI; EngPI

10/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007381921 **Image available**

WPI Acc No: 1988-015856/198803

XRPX Acc No: N88-011856

**Cardiac stimulator for ventricular tachyarrhythmias - increases
aggressiveness of therapy with elapsed time and with increasing abnormal**

heat rate

Patent Assignee: INTERMEDICS INC (INTE-N)

Inventor: BAKER R G; CALFEE R V; HALUSKA E A; WHISTLER S J; CALFER R V

Number of Countries: 011 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 253505	A	19880120	EP 87305279	A	19870615	198803 B
BR 8703038	A	19880308				198815
US 4830006	A	19890516	US 86875218	A	19860617	198923
CA 1299252	C	19920421	CA 539771	A	19870616	199221
EP 253505	B1	19940209	EP 87305279	A	19870615	199406
DE 3789036	G	19940324	DE 3789036	A	19870615	199413
			EP 87305279	A	19870615	
US 4830006	B1	19971028	US 86875218	A	19860617	199749

Priority Applications (No Type Date): US 86875218 A 19860617

Cited Patents: 1.Jnl.Ref; A3...8847; DE 3110013; DE 3321695; DE 3503854; EP 74126; EP 94758; No-SR.Pub; US 4593695; WO 8200415

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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EP 253505	A	E 34		
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Designated States (Regional): CH DE FR GB IT LI NL SE

US 4830006	A	37		
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EP 253505	B1	E 42	A61N-001/365	
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Designated States (Regional): CH DE FR GB IT LI NL SE

DE 3789036	G		A61N-001/365	Based on patent EP 253505
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US 4830006	B1	3	A61N-001/39	
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CA 1299252	C		A61N-001/365	
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Abstract (Basic): EP 253505 A

The stimulator divides the heart rate continuouum into regions including two **classes** of tachycardia, contiguous to each other and of progressively higher heart rate ranges. The lowest and highest of the tachycardia **classes** are bounded respect. by a sinus rate region and a fibrillation region of the continuum. The stimulator also selectively adjusts the boundaries between the tachycardia **classes** and between the lowest and highest of those **classes** and the respective sinus rate and fibrillation regions, to corresp. adjust the rate ranges of the **classes** in a desired manner. The stimulator selectively detects cardiac events anywhere within the continuum and distinguishes between normal and abnormal tachycardias among the detected events and selectively treats a detected abnormal tachycardia with any of a number of therapy regimens of differing degrees of aggressiveness, toward terminating the detected tachycardia.

ADVANTAGE - Provides physician with complete control over aggressiveness of therapy for any particular patient and tachycardia.

Dwg.6/18

Title Terms: CARDIAC; STIMULATING; VENTRICLE; INCREASE; THERAPEUTIC; ELAPSED; TIME; INCREASE; ABNORMAL; HEAT; RATE

Index Terms/Additional Words: PACE; **PACEMAKER**

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/365; A61N-001/39

International Patent Class (Additional): A61N-001/36; G06F-015/42; H05G-000/00

File Segment: EPI; EngPI

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13/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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017093571

WPI Acc No: 2005-417899/200542

Related WPI Acc No: 2005-057217; 2005-356197; 2005-372234; 2005-372291;
2005-386243; 2005-396175; 2005-405314; 2005-417822; 2005-417876;
2005-417878; 2005-444825; 2005-496654; 2005-496788; 2005-496790;
2005-496791; 2005-505434; 2005-505982; 2005-511941; 2005-511942;
2005-512238; 2005-551256; 2005-561192; 2005-563204; 2005-563205;
2005-563206; 2005-563207; 2005-563229; 2005-570765; 2005-581168;
2005-590475; 2005-590482; 2005-590483; 2005-590484; 2005-628969;
2005-629445; 2005-636982; 2005-675082; 2005-675083; 2005-675084;
2006-037957; 2006-064535; 2006-381403

XRAM Acc No: C05-128171

**Implantable device for, e.g. monitoring intercranial pressure within
aneurysm sac or eye tremor comprises sensor and anti-scarring agent or
composition containing the agent that inhibits scarring on implant
surface**

Patent Assignee: ANGIOTECH INT AG (ANGI-N)

Inventor: GRAVETT D M; HUNTER W L; MAITI A; TOLEIKIS P M

Number of Countries: 108 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200551871	A2	20050609	WO 2004US39387	A	20041122	200542 B
US 20050154374	A1	20050714	US 2003523908	P	20031120	200547
			US 2003524023	P	20031120	
			US 2003525226	P	20031124	
			US 2003526541	P	20031203	
			US 2004578471	P	20040609	
			US 2004586861	P	20040709	
			US 2004986230	A	20041110	
			US 2004986231	A	20041110	
			US 2004996352	A	20041122	
			US 20046882	A	20041217	
US 20050169960	A1	20050804	US 2003523908	P	20031120	200552
			US 2003524023	P	20031120	
			US 2003525226	P	20031124	
			US 2003526541	P	20031203	
			US 2004578471	P	20040609	
			US 2004586861	P	20040709	
			US 2004986230	A	20041110	
			US 2004986231	A	20041110	
			US 2004996352	A	20041122	
			US 20044671	A	20041202	
US 20050169961	A1	20050804	US 2003523908	P	20031120	200555
			US 2003524023	P	20031120	
			US 2003525226	P	20031124	
			US 2003526541	P	20031203	
			US 2004578471	P	20040609	
			US 2004586861	P	20040709	
			US 2004986230	A	20041110	
			US 2004986231	A	20041110	
			US 2004996352	A	20041122	
			US 20044675	A	20041202	
US 20050186239	A1	20050825	US 2003523908	P	20031120	200556
			US 2003524023	P	20031120	
			US 2003525226	P	20031124	
			US 2003526541	P	20031203	
			US 2004578471	P	20040609	

			US 2004586861	P	20040709	
			US 2004986230	A	20041110	
			US 2004986231	A	20041110	
			US 2004996352	A	20041122	
			US 20046897	A	20041207	
US 20050186245	A1	20050825	US 2003523908	P	20031120	200556
			US 2003524023	P	20031120	
			US 2003525226	P	20031124	
			US 2003526541	P	20031203	
			US 2004578471	P	20040609	
			US 2004586861	P	20040709	
			US 2004986230	A	20041110	
			US 2004986231	A	20041110	
			US 2004996352	A	20041122	
			US 20046880	A	20041207	

Priority Applications (No Type Date): US 2004986231 A 20041110; US 2003523908 P 20031120; US 2003524023 P 20031120; US 2003525226 P 20031124; US 2003526541 P 20031203; US 2004578471 P 20040609; US 2004586861 P 20040709; US 2004986230 A 20041110; US 2004996352 A 20041122; US 20046882 A 20041217; US 20044671 A 20041202; US 20044675 A 20041202; US 20046897 A 20041207; US 20046880 A 20041207

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200551871	A2	E		C07C-000/00	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20050154374	A1			A61K-009/22	Provisional application US 2003523908
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Provisional application US 2003524023
Provisional application US 2003525226
Provisional application US 2003526541
Provisional application US 2004578471
Provisional application US 2004586861
CIP of application US 2004986230
CIP of application US 2004986231
Cont of application US 2004996352

US 20050169960	A1			A61F-002/28	Provisional application US 2003523908
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Provisional application US 2003524023
Provisional application US 2003525226
Provisional application US 2003526541
Provisional application US 2004578471
Provisional application US 2004586861
CIP of application US 2004986230
CIP of application US 2004986231
Cont of application US 2004996352

US 20050169961	A1			A61K-009/22	Provisional application US 2003523908
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Provisional application US 2003524023
Provisional application US 2003525226
Provisional application US 2003526541
Provisional application US 2004578471
Provisional application US 2004586861
CIP of application US 2004986230

		CIP of application US 2004986231
		Cont of application US 2004996352
US 20050186239 A1	A61K-009/22	Provisional application US 2003523908
		Provisional application US 2003524023
		Provisional application US 2003525226
		Provisional application US 2003526541
		Provisional application US 2004578471
		Provisional application US 2004586861
		CIP of application US 2004986230
		CIP of application US 2004986231
		Cont of application US 2004996352
US 20050186245 A1	A61K-009/22	Provisional application US 2003523908
		Provisional application US 2003524023
		Provisional application US 2003525226
		Provisional application US 2003526541
		Provisional application US 2004578471
		Provisional application US 2004586861
		CIP of application US 2004986230
		CIP of application US 2004986231
		Cont of application US 2004996352

Abstract (Basic): WO 200551871 A2

NOVELTY - A device comprising a sensor and an anti-scarring agent (a1) or a composition (c1) containing (a1) that inhibits scarring between the device and a host into which the device is implanted, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

- (1) inhibiting scarring involving placing the sensor or pump, and (a1) or (c1) comprising (a1) into an animal host; and
- (2) making a device.

USE - The device is used as a closed loop insulin delivery system to detect chemical changes (e.g. blood glucose) in the host and stimulate an insulin pump to supply insulin; for monitoring fluid flow, intracranial pressure within an aneurysm sac, mechanical pressure associated with a bone fracture, barometric and intraocular pressure, eye tremors, depth of corneal implant, **cardiac output**, ejection fraction, blood pressure in **heart** chamber, ventricular wall motions, blood flow to a transplanted organ, heart rate or pulmonary functions; for delivering an electrical signal to an implantable electrochemical transducer that acts on the middle or inner ear; as a monolithic bioelectronic device for detecting an analyte within the host; for delivering insulin, narcotic, chemotherapeutic **agent**, **anti-arrhythmic** /anti-spasmodic **drug**, anti-spastic **agent** or an antibiotic; for delivering pain medication directly into the cerebrospinal fluid of the intrathecal space surrounding the spinal cord; in chemotherapy for infusing a chemotherapeutic agent to the blood vessels/artery that supply the solid/hepatic tumor; and as an implantable cardiac electrode in the treatment of heart disease (all claimed).

ADVANTAGE - The anti-scarring agent inhibits adhesion between the device and a host into which the device is implanted. The device can be adapted for delivering a drug as a continuous slow release or at prescribed dosages in a pulsatile manner; and produce superior clinical results as a result of anti-scarring agents that reduce excessive scarring and fibrous tissue accumulation.

pp; 1619 DwgNo 0/22

Title Terms: IMPLANT; DEVICE; MONITOR; PRESSURE; SAC; EYE; TREMOR; COMPRISE; SENSE; ANTI; SCAR; AGENT; COMPOSITION; CONTAIN; AGENT; INHIBIT; SCAR; IMPLANT; SURFACE

Derwent Class: B05; B07; P32
International Patent Class (Main): A61F-002/28; A61K-009/22; C07C-000/00
File Segment: CPI; EngPI

13/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016927345 **Image available**
WPI Acc No: 2005-251655/200526
XRPX Acc No: N05-207079

Implantable medical device e.g. pacemaker consists of hermetically sealed switch positioned on outer portion of device housing for initiating, inhibiting or adjusting therapy provided to patient
Patent Assignee: OLSON W H (OLSO-I); MEDTRONIC INC (MEDT)
Inventor: OLSON W H; OLSEN W H
Number of Countries: 108 Number of Patents: 002
Patent Family:
Patent No Kind Date Applicat No Kind Date Week
US 20050049647 A1 20050303 US 2003652839 A 20030829 200526 B
WO 200521093 A1 20050310 WO 2004US27853 A 20040827 200526

Priority Applications (No Type Date): US 2003652839 A 20030829

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 20050049647 A1 14 A61N-001/375

WO 200521093 A1 E A61N-001/375

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ
CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID
IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ
NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ
UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR
GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL
SZ TR TZ UG ZM ZW

Abstract (Basic): US 20050049647 A1

NOVELTY - A processor positioned within a device housing (11) communicates with a sensor for processing the **cardiac signals** from sensor. The actuation of a hermetically sealed switch (100) positioned on the exterior of the housing, causes the implantable medical device (IMD) (10) to inhibit, initiate or adjust therapy provided to patient (135).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for control method of implanted cardiac medical device.

USE - E.g. **pacemaker**, **cardioverter**, **defibrillator**, **implantable** subcutaneous monitor, drug **pump**, neural stimulator, muscular stimulator, spinal stimulator and **pacemaker** cardioverter defibrillator (PCD) device used for applying anti-tachyarrhythmia pacing, **anti - tachycardia** pacing and shock **therapies** to patient.

ADVANTAGE - Enables the patient or caretaker to actuate the switch by pressing against the tissue over the implant site, hence external communication devices are not necessary for controlling the device.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of the IMD implanted within the patient.

IMD (10)
device housing (11)
ventricular lead (16)
switch (100)

patient (135)
pp; 14 DwgNo 7/7
Title Terms: IMPLANT; MEDICAL; DEVICE; **PACEMAKER** ; CONSIST; HERMETIC; SEAL
; SWITCH; POSITION; OUTER; PORTION; DEVICE; HOUSING; INITIATE; INHIBIT;
ADJUST; THERAPEUTIC; PATIENT
Derwent Class: P34; S05; V03
International Patent Class (Main): A61N-001/375
International Patent Class (Additional): A61N-001/08; A61N-001/39
File Segment: EPI; EngPI

13/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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016735131 **Image available**
WPI Acc No: 2005-059407/200507
XRPX Acc No: N05-051657

Implantable cardiac stimulation device e.g. pacemaker , for patient, has signal generation unit to generate warning signal to alert patient of efficacy problems, and control unit controlling pump to compensate for problems

Patent Assignee: PACESETTER INC (PACE-N); BARSTAD J (BARS-I); BOILEAU P (BOIL-I); BORNZIN G A (BORN-I); BRADLEY K (BRAD-I); FALKENBERG E (FALK-I); FLORIO J J (FLOR-I)

Inventor: BARSTAD J; BOILEAU P; BORNZIN G A; BRADLEY K; FALKENBERG E; FLORIO J J

Number of Countries: 034 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1491234	A1	20041229	EP 2004253712	A	20040622	200507 B
US 20040267321	A1	20041230	US 2003608409	A	20030626	200507

Priority Applications (No Type Date): US 2003608409 A 20030626

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 1491234	A1	E	36	A61N-001/00	
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Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR

US 20040267321	A1		A61N-001/362
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Abstract (Basic): EP 1491234 A1

NOVELTY - The device has a microcontroller with an **antiarrhythmic drug** efficacy monitoring unit (150) for monitoring efficacy of drugs prescribed to a patient. A warning signal generation unit (154) generates and transmits a warning signal to a bedside monitoring unit for alerting the patient of possible drug efficacy problems. A drug pump control unit controls an optional **implantable drug pump** to compensate for drug efficacy problems.

USE - Used for implanting within a patient (claimed) to treat arrhythmia e.g. bradycardia and tachyarrhythmia.

ADVANTAGE - The warning signal generation unit automatically and promptly warns the patient of any failure to administer the drugs or any significant change in the efficacy of the drugs, thus eliminating the need for the patient to frequent visit physicians. The drug pump control unit automatically compensates for the possible drug efficacy problem, thereby ensuring optimal dosage to the patient at all times.

DESCRIPTION OF DRAWING(S) - The drawing shows a functional block diagram of internal components of a stimulation device.

Microprocessor (60)

Antiarrhythmic drug efficacy monitoring unit (150)
Cardiac signal analysis unit (152)
Warning signal generation unit (154)
Drug pump control unit (158)
pp; 36 DwgNo 2/12

Title Terms: IMPLANT; CARDIAC; STIMULATING; DEVICE; **PACEMAKER** ; PATIENT;
SIGNAL; GENERATE; UNIT; GENERATE; WARNING; SIGNAL; ALERT; PATIENT;
PROBLEM; CONTROL; UNIT; CONTROL; PUMP; COMPENSATE; PROBLEM
Derwent Class: P31; P34; S05; W05
International Patent Class (Main): A61N-001/00; A61N-001/362
International Patent Class (Additional): A61B-005/0452; A61N-001/18;
A61N-001/30; A61N-001/39
File Segment: EPI; EngPI

13/5/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014085999
WPI Acc No: 2001-570213/200164
Related WPI Acc No: 2000-548152; 2001-647240
XRAM Acc No: C01-169436
XRPX Acc No: N01-424950

**Application of anti-tachyarrhythmia therapy, e.g. electrical
countershock, to heart involves delaying delivery for programmable period
if abnormal susceptibility to ventricular tachyarrhythmia is detected**

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N)

Inventor: WARREN J A

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010021863	A1	20010913	US 9755181	P	19970808	200164 B
			US 98130090	A	19980807	
			US 2000558937	A	20000426	
			US 2001852513	A	20010510	
US 6393321	B1	20020521	US 9755181	P	19970808	200239
			US 98130090	A	19980807	
			US 2000558937	A	20000426	
			US 2001852513	A	20010510	

Priority Applications (No Type Date): US 9755181 P 19970808; US 98130090 A
19980807; US 2000558937 A 20000426; US 2001852513 A 20010510

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20010021863	A1	13	A61N-001/362	Provisional application US 9755181

			Div ex application US 98130090
			Cont of application US 2000558937
			Div ex patent US 6091991
US 6393321	B1	A61N-001/18	Provisional application US 9755181
			Div ex application US 98130090
			Cont of application US 2000558937
			Div ex patent US 6091991
			Cont of patent US 6292696

Abstract (Basic): US 20010021863 A1

NOVELTY - Anti-tachyarrhythmia therapy is applied to a heart by
monitoring ventricular activity of the heart for indication of abnormal
susceptibility to the ventricular tachyarrhythmia. The delivery of the
therapy is delayed for programmable period if the indication of the

abnormal susceptibility to the ventricular tachyarrhythmia is detected.

DETAILED DESCRIPTION - Application of anti-tachyarrhythmia therapy to a heart involves detecting an indication of need for anti-tachyarrhythmia therapy from atrium of the heart atrial tachyarrhythmia activity. The ventricular activity of the heart is monitored for indication of abnormal susceptibility to the ventricular tachyarrhythmia. The therapy is applied to the atrium in response to the detected activity, but delaying the application for a first time delay if the indication of the abnormal susceptibility to the ventricular tachyarrhythmia is detected. An **INDEPENDENT CLAIM** is also included for an **implantable cardioverter - defibrillator** comprising atrial and ventricular receivers, atrial therapy circuit, and controller. The atrial receiver accepts atrial **heart** activity **signal** from an atrium of the **heart** , while the ventricular receiver accepts ventricular activity **signal** from the ventricle of the **heart** . The atrial therapy circuit delivers anti-tachyarrhythmia therapy to the atrium. The controller is coupled to the circuit and the receivers, for controlling the delivery of the therapy to the atrium. It includes a first timer, for delaying the delivery of the therapy to the atrium in response to signal of abnormal susceptibility to the ventricular tachyarrhythmia.

USE - For applying or delivering anti-tachyarrhythmia therapy, e.g. electrical countershock, anti-tachyarrhythmia **drug** , or **anti - tachycardia** pacing to a heart.

ADVANTAGE - The inventive method delays delivery of the therapy when an indication of abnormal susceptibility to a ventricular tachyarrhythmia is present, thus reducing risk of re-inducing ventricular tachyarrhythmias, e.g. life-threatening ventricular fibrillation.

pp; 13 DwgNo 0/6

Title Terms: APPLY; ANTI; TACHYARRHYTHMIA; THERAPEUTIC; ELECTRIC; HEART; DELAY; DELIVER; PROGRAM; PERIOD; ABNORMAL; SUSCEPTIBILITY; VENTRICLE; TACHYARRHYTHMIA; DETECT

Derwent Class: B07; P34; S05

International Patent Class (Main): A61N-001/18; A61N-001/362

File Segment: CPI; EPI; EngPI

13/5/12 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009238600 **Image available**

WPI Acc No: 1992-366021/199244

XRPX Acc No: N92-278988

Implantable device for detecting far-field cardiac signals - uses pairs of sensing electrodes, and selects electrode pair signal providing optimum indication of electrogram characteristics

Patent Assignee: MEDTRONIC INC (MEDT)

Inventor: BENNETT T D; COMBS W J; KALLOK M J; LEE B B; MEHRA R; KALLOK ; KLEIN G J

Number of Countries: 018 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9217240	A1	19921015	WO 92US981	A	19920204	199244 B
AU 9217506	A	19921102	AU 9217506	A	19920204	199305
			WO 92US981	A	19920204	
EP 578748	A1	19940119	EP 92910148	A	19920204	199403
			WO 92US981	A	19920204	
US 5331966	A	19940726	US 91681235	A	19910405	199429

			US 9370008	A	19930528	
			US 93168725	A	19931216	
JP 6505662	W	19940630	JP 92509320	A	19920204	199430
			WO 92US981	A	19920204	
AU 654552	B	19941110	AU 9217506	A	19920204	199445
EP 578748	B1	19960501	EP 92910148	A	19920204	199622
			WO 92US981	A	19920204	
DE 69210395	E	19960605	DE 610395	A	19920204	199628
			EP 92910148	A	19920204	
			WO 92US981	A	19920204	

Priority Applications (No Type Date): US 91681235 A 19910405; US 9370008 A 19930528; US 93168725 A 19931216

Cited Patents: US 30372; US 3648707; US 3915174

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 9217240	A1	E	84	A61N-001/365	
Designated States (National): AU CA JP					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL SE					
AU 9217506	A			A61N-001/365	Based on patent WO 9217240
EP 578748	A1	E	2	A61N-001/365	Based on patent WO 9217240
Designated States (Regional): DE FR NL SE					
US 5331966	A		36	A61B-005/0428	Cont of application US 91681235
Cont of application US 9370008					
JP 6505662	W		21	A61N-001/365	Based on patent WO 9217240
AU 654552	B			A61N-001/365	Previous Publ. patent AU 9217506
Based on patent WO 9217240					
EP 578748	B1	E	41	A61N-001/365	Based on patent WO 9217240
Designated States (Regional): DE FR NL SE					
DE 69210395	E			A61N-001/365	Based on patent EP 578748
Based on patent WO 9217240					

Abstract (Basic): WO 9217240 A

The sensing device includes an endocardial lead (12) having tip and ring electrodes (14,16) within the heart right ventricle. An array of sensing electrodes (A,B,C) are disposed on a pulse generator housing (10).

The sensing electrodes are switchably selectable in sequence to provide generally orthogonally disposed electrode pairs. The sensed signals are stored and compared. The electrode pair **signal** providing optimum indication of the **cardiac signal** characteristics is selected for use in detecting capture of the heart by a pacing stimulation pulse.

USE/ADVANTAGE - For use with cardiac **pacemaker**, defibrillator, drug dispensing pump, etc. Provides orientation insensitive **cardiac signal** detection.

Dwg.1/12

Title Terms: IMPLANT; DEVICE; DETECT; FIELD; CARDIAC; SIGNAL; PAIR; SENSE; ELECTRODE; SELECT; ELECTRODE; PAIR; SIGNAL; OPTIMUM; INDICATE; ELECTROGRAM; CHARACTERISTIC

Index Terms/Additional Words: CARDIAC; **PACEMAKER**; DEFIBRILLATOR

Derwent Class: P31; P34; S05

International Patent Class (Main): A61B-005/0428; A61N-001/365

File Segment: EPI; EngPI

13/5/13 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008939334 **Image available**

AU 9170130	A	19910822				199142
CA 2034627	A	19910817				199143
US 5083563	A	19920128	US 90481364	A	19900216	199207
EP 442601	A3	19920708	EP 91300124	A	19910108	199334
EP 442601	B1	19961113	EP 91300124	A	19910108	199650
DE 69123064	E	19961219	DE 623064	A	19910108	199705
			EP 91300124	A	19910108	

Priority Applications (No Type Date): US 90481364 A 19900216

Cited Patents: NoSR.Pub; 2.Jnl.Ref; EP 317065; EP 347708; EP 348271; EP 74126; WO 8202836

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 442601 B1 E 18 A61N-001/365

Designated States (Regional): DE FR GB IT NL SE

DE 69123064 E A61N-001/365 Based on patent EP 442601

Abstract (Basic): EP 442601 A

An appts. for heart treatment which obtains an electrogram from the heart and acquires a signal indicative of ventricular pressure. The signal is processed to produce a signal representative of peak-to-peak ventricular pressure amplitude and ventricular peak pressure. These are compared to predetermined minimum levels and the electrogram is examined to determine whether an arrhythmia is present. Therapy is then applied to the heart based upon the information determined.

The processor removes changes in baseline level of the ventricular signal pressure and low frequency components in the same signal.

ADVANTAGE - Prevents unnecessary discharges to heart and consequence damage to the myocardium with avoidance of distress and pain to the recipient and maximising battery life. (17pp Dwg.No.3/7

Title Terms: AUTOMATIC; CONTROL; IMPLANT; **PACEMAKER** ; RESPOND; VENTRICLE; PRESSURE; EXAMINATION; ELECTROGRAM; DETERMINE; CONTROL; REQUIRE; THERAPEUTIC

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/365

International Patent Class (Additional): A61N-001/36; A61N-001/37; A61N-001/39

File Segment: EPI; EngPI

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16/5/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015863386 **Image available**

WPI Acc No: 2004-021217/200402

XRPX Acc No: N04-016279

Cardiac pacing method in pacemakers , involves applying anti-tachycardia stimulus to heart based on sequence of depolarization of heart

Patent Assignee: STRUBLE C L (STRU-I)

Inventor: STRUBLE C L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030199932	A1	20031023	US 2002126522	A	20020422	200402 B

Priority Applications (No Type Date): US 2002126522 A 20020422

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030199932	A1		24	A61N-001/365	

Abstract (Basic): US 20030199932 A1

NOVELTY - The depolarization of heart is sensed at different locations within the heart. The sequence of the sensed depolarizations are measured. An anti-tachycardia **stimulus** is applied to the **heart** at one or more specified locations, based on the determined sequence of depolarizations.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) computer readable medium having instructions for actuating **pacemaker** ;
- (2) cardiac pacing system; and
- (3) implantable medical device.

USE - In **pacemakers** .

ADVANTAGE - Efficiently reduces the tachycardia in the heart, and enhances the quality of life. Improves or optimizes the **anti - tachycardia** pacing (ATP) **therapy** .

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart illustrating the anti-tachycardia technique.

pp; 24 DwgNo 7/11

Title Terms: CARDIAC; PACE; METHOD; **PACEMAKER** ; APPLY; ANTI; TACHYCARDIA; STIMULUS; HEART; BASED; SEQUENCE; DEPOLARISE; HEART

Derwent Class: P34; S05; T01

International Patent Class (Main): A61N-001/365

File Segment: EPI; EngPI

16/5/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014980049

WPI Acc No: 2003-040564/200303

XRAM Acc No: C03-009550

XRPX Acc No: N03-031874

Implantable sustained release dosage form for improving cardiac function and promoting angiogenesis in the heart comprises a drug delivery device and a cardiac drug

Patent Assignee: DURECT CORP (DURE-N); HERMANS J J R (HERM-I); JOHNSON R M (JOHN-I); SMITS J F M (SMIT-I); STRUIJKER-BOUDIER H A J (STRU-I);

THEEUWES F (THEE-I)

Inventor: HERMANS J J R; JOHNSON R M; SMITS J F M; STRUIJKER-BOUDIER H A J;
THEEUWES F

Number of Countries: 101 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200276344	A1	20021003	WO 2002US11303	A	20020322	200303 B
US 20030009145	A1	20030109	US 2001278518	P	20010323	200311
			US 2001311309	P	20010809	
			US 2002347326	P	20020109	
			US 2002104247	A	20020322	
EP 1379197	A1	20040114	EP 2002721710	A	20020322	200410
			WO 2002US11303	A	20020322	
AU 2002252626	A1	20021008	AU 2002252626	A	20020322	200432

Priority Applications (No Type Date): US 2002347326 P 20020109; US
2001278518 P 20010323; US 2001311309 P 20010809; US 2002104247 A 20020322

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200276344	A1	E	78	A61F-002/02	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA
ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

US 20030009145	A1			A61M-031/00	Provisional application US 2001278518
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Provisional application US 2001311309

Provisional application US 2002347326

EP 1379197	A1	E		A61F-002/02	Based on patent WO 200276344
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI TR

AU 2002252626	A1			A61F-002/02	Based on patent WO 200276344
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Abstract (Basic): WO 200276344 A1

NOVELTY - An implantable, sustained release dosage form to improve cardiac function comprising a drug delivery device and a cardiac drug, which allows administration over at least a 24 hour period is new.

USE - The device is used for promoting angiogenesis in the heart or cardiac vasculature and for improving cardiac function in a subject, by implanting a sustained release dosage form within the pericardium or myocardial tissue or cardiac vasculature of the subject (claimed). It has applications in the treatment of cardiac disease e.g. arrhythmia, for increasing cardiac function by increasing vascularization by encouraging angiogenesis. Particularly useful when the delivery of a drug to the cardiac tissue is desired for an extended period of time to increase its effectiveness or to reduce the risk and/or severity of adverse side effects or to reduce the amount of drug delivered.

ADVANTAGE - Small quantities of a drug is administered over an extended period of time to the heart tissues. It avoid problems associated with bolus injection of a drug which is too high and have deleterious effects on the cardiac tissue. It provides long-term delivery of a drug to the pericardium or myocardial tissue, approximating to zero-order kinetics over a substantial period of delivery. The delivery of a drug to the cardiac tissue can be achieved without invasive surgery, thus reducing trauma to the patient. The depot eventually degrades, obviating the need for removal.

pp; 78 DwgNo 0/11

Title Terms: IMPLANT; SUSTAINED; RELEASE; DOSE; FORM; IMPROVE; CARDIAC;

FUNCTION; PROMOTE; ANGIOGENESIS; HEART; COMPRISE; DRUG; DELIVER; DEVICE;
CARDIAC; DRUG
Derwent Class: B05; B07; D22; P32; P34
International Patent Class (Main): A61F-002/02; A61M-031/00
International Patent Class (Additional): A61K-009/50
File Segment: CPI; EngPI

16/5/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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009449951 **Image available**
WPI Acc No: 1993-143476/199317
XRPX Acc No: N93-109471

Antiarrhythmia pacemaker for detecting and treating arrhythmia episodes in heart - has heart pulse stimulator selectively generating pacing therapies eg pacing defibrillation and cardioversion, and has nerve stimulator in contact with nerve fibres within automatic nervous system.
Patent Assignee: TELETRONICS NV (TELE-N); TELETRONICS PACING SYSTEMS INC (TELE-N)

Inventor: COLLINS K A
Number of Countries: 004 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5203326	A	19930420	US 91809978	A	19911218	199317 B
EP 547734	A2	19930623	EP 92306760	A	19920723	199325
EP 547734	A3	19950111	EP 92306760	A	19920723	199538
EP 547734	B1	19980415	EP 92306760	A	19920723	199819
DE 69225119	E	19980520	DE 625119	A	19920723	199826
			EP 92306760	A	19920723	

Priority Applications (No Type Date): US 91809978 A 19911218
Cited Patents: No-SR.Pub; 1.Jnl.Ref; EP 469817; US 4799493; US 4813418; WO 9321824

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5203326	A		30	A61N-001/362	
EP 547734	A2 E		33	A61N-001/365	
				Designated States (Regional): DE FR GB	
EP 547734	B1 E		33	A61N-001/365	
				Designated States (Regional): DE FR GB	
DE 69225119	E			A61N-001/365	Based on patent EP 547734
EP 547734	A3			A61N-001/362	

Abstract (Basic): US 5203326 A

The antiarrhythmia **pacemaker** detects the occurrence of an abnormal condition of a patient's heart and, in response, delivers an **antiarrhythmia therapy** to the patient which includes two components, electrical **stimulation** of the **heart** and electrical **stimulation** of nerves or ganglia in the automatic nervous system. The antiarrhythmia **pacemaker controls** electrical **stimulation** of the **heart** in terms of timing, frequency, amplitude, duration and other operational parameters, to provide pacing **therapies** e.g. **antitachycardia** pacing, cardioversion and defibrillation.

A nerve stimulation electrode, which is driven by a nerve fibre pulse stimulator, stimulates preselected nerve fibres within the patient's autonomic nervous system. An arrhythmia therapy control responds to the detection and confirmation of an abnormal **heart** condition by **controlling** and coordinating the **heart** pulse

stimulator and the nerve fibre stimulator to direct performance of a combined **heart** and nerve **stimulation** therapy.

ADVANTAGE - Prevents arrhythmias by **stimulating** parasympathetic nerve fibres to lower heart rate while performing **antiarrhythmia stimulation** therapy .

Dwg.1/16

Title Terms: **PACEMAKER** ; DETECT; TREAT; HEART; HEART; PULSE; STIMULATING; SELECT; GENERATE; PACE; PACE; DEFIBRILLATE; NERVE; STIMULATING; CONTACT; NERVE; FIBRE; AUTOMATIC; NERVE; SYSTEM

Derwent Class: P34; S05; T01

International Patent Class (Main): A61N-001/362; A61N-001/365

File Segment: EPI; EngPI

16/5/12 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009290048 **Image available**

WPI Acc No: 1992-417457/199251

XRPX Acc No: N92-318348

Treating cardiac arrhythmia with implantable cardioverter - defibrillator pacemaker - delivering anti - tachycardia pacing therapy and cardioversion-defibrillation therapy when required and increasing bradycardia support pacing rate following therapy

Patent Assignee: TELETRONICS NV (TELE-N); PACESETTER INC (PACE-N); TELETRONICS PACING SYSTEMS INC (TELE-N)

Inventor: STEPHENS A C; WILSON S G

Number of Countries: 004 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 518599	A2	19921216	EP 92305248	A	19920608	199251 B
EP 518599	A3	19930210	EP 92305248	A	19920608	199348
US 5292339	A	19940308	US 92875777	A	19920429	199410
EP 518599	B1	19970924	EP 92305248	A	19920608	199743
DE 69222362	E	19971030	DE 622362	A	19920608	199749
			EP 92305248	A	19920608	
EP 518599	B2	20030827	EP 92305248	A	19920608	200358

Priority Applications (No Type Date): AU 916715 A 19910614

Cited Patents: No-SR.Pub; EP 161140; US 4869252; US 4895151; US 4998974; WO 8901802; US 4587970

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 518599	A2	E	12	A61N-001/39	
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Designated States (Regional): DE FR GB

EP 518599	A3			A61N-001/39	
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US 5292339	A		11	A61N-001/00	
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EP 518599	B1	E	14	A61N-001/39	
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Designated States (Regional): DE FR GB

DE 69222362	E			A61N-001/39	Based on patent EP 518599
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EP 518599	B2	E		A61N-001/39	
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Designated States (Regional): DE FR GB

Abstract (Basic): EP 518599 A

The method for treating cardiac arrhythmias involves providing bradycardic support pacing at a normal standby rate in the absence of a tachycardia. Upon detection and confirmation of a tachycardia, anti-tachycardia pacing pulse thereby and-of cardioversion or defibrillation thereby is delivered to the **heart** , using a **pacemaker controlled** by a microprocessor.

Upon reversion of the tachycardia, bradycardia support pacing is delivered to the heart, at a higher rate than the normal standby rate, and for predetermined time period. At the end of the time period, the rate is returned to the normal rate, either directly or in decremented steps.

ADVANTAGE - Provides compensation for hemodynamic compromise experienced during tachycardia and-or following antitachycardia therapy. Following reversion from tachycardia.

Dwg. 1/4

Title Terms: TREAT; CARDIAC; ARRHYTHMIC; IMPLANT; CARDIOVERTER;
DEFIBRILLATE; **PACEMAKER** ; DELIVER; ANTI; TACHYCARDIA; PACE; THERAPEUTIC;
DEFIBRILLATE; THERAPEUTIC; REQUIRE; INCREASE; BRADYCARDIA; SUPPORT; PACE;
RATE; FOLLOW; THERAPEUTIC

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/00; A61N-001/39

File Segment: EPI; EngPI

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22/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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017739717 **Image available**
WPI Acc No: 2006-250995/200626
Related WPI Acc No: 2006-251000; 2006-251001
XRAM Acc No: C06-081762
XRPX Acc No: N06-215137

System for physiologic measurements, comprises an an implantable medical device to determine an absolute physiologic parameter value, and an external computing device and backend computing system

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N)

Inventor: CHAVAN A; MAZAR S T; VON ARX J A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20060064133	A1	20060323	US 2004943269	A	20040917	200626 B

Priority Applications (No Type Date): US 2004943269 A 20040917

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20060064133	A1	26	A61N-001/36	

Abstract (Basic): US 20060064133 A1

NOVELTY - A system for deriving physiological measurement values, comprises an implantable medical device (IMD; 102) and a computing device (106) to receive the parameter, obtain an ambient condition value from a source and calculate a relative parameter value.

DETAILED DESCRIPTION - A system for deriving physiological measurement values, comprises a computing device (106) to receive the parameter, obtain an ambient condition value from a source and calculate a relative parameter value. The computing system (108) comprises a database accessible by health care providers, which can obtain the parameter value and use the relative parameter value to service the diagnosing patient, cardiac pacing-, anti-tachycardia-, drug delivery-, neurostimulation-, and blood pump therapy or modifying settings of an implantable medical device (IMD) (102). The parameter and the ambient condition value are marked with a time stamp and the device uses the time stamp to select the obtained condition value. The parameter value comprises intravascular or intracardiac blood pressure and the condition value comprises an ambient pressure value. The computing device includes a sensor to measure the ambient condition value, an IMD programmer and a repeater in communication with the computing system. The source comprises the computing system, a monitor device (104) fit to be worn around a patient's body part, connected to a belt, worn as a patch, a personal digital assistant (PDA), carried in a pocket or a personal carry bag and a customized cell phone or pager. The IMD and the device are communicated via a radio frequency communication connection, an acoustic communication connection, an electrical field communication connection, and an optical communication connection. The IMD comprises a physiologic parameter sensor, a **pacemaker**, a defibrillator, bi-ventricular pacer, a ventricular assist blood pump, a drug delivery pump, a drug infusion device, a neurostimulating device, an intraocular shunt, and an intra-cranial shunt; and a processor to generate and communicate patient therapy information based on the relative parameter value.

An INDEPENDENT CLAIM is also included for a method using the new system.

USE - Used for deriving relative physiologic measurement values (claimed) and also to obtain blood pressure.

ADVANTAGE - Measures any physiologic measurement, such as, blood pressure, temperature, blood or fluid flow, strain, electrical, chemical or magnetic properties within the body. Capable of communicating gauge pressure and can include the IMDs and/or the external computing devices individually.

DESCRIPTION OF DRAWING(S) - The drawing shows a physiologic measurement system.

Implantable medical device (102)

Monitoring device (104)

Computing device (106)

Computing system (108)

Sensor circuitry (112)

Wireless connections (114-122)

pp; 26 DwgNo 1/12

Title Terms: SYSTEM; MEASURE; COMPRISE; IMPLANT; MEDICAL; DEVICE; DETERMINE ; ABSOLUTE; PARAMETER; VALUE; EXTERNAL; COMPUTATION; DEVICE; COMPUTATION; SYSTEM

Derwent Class: B07; D22; P34; S04; S05; T01; W05

International Patent Class (Main): A61N-001/36

International Patent Class (Additional): A61M-031/00

File Segment: CPI; EPI; EngPI

22/5/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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017095240

WPI Acc No: 2005-419569/200543

XRPX Acc No: N05-340190

Implantable medical device e.g. pacemaker for providing antibradycardiac therapy, has memory management unit dividing data memory into two zones for storing information and signal during time period, when occurrence of event is detected

Patent Assignee: ELA MEDICAL SA (ELAM-N)

Inventor: HENRY C; POEZEVARA Y

Number of Countries: 037 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1537894	A1	20050608	EP 2004292864	A	20041203	200543 B
FR 2863175	A1	20050610	FR 200314158	A	20031203	200543
US 20050137488	A1	20050623	US 20044661	A	20041203	200543

Priority Applications (No Type Date): FR 200314158 A 20031203

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 1537894	A1	F	11	A61N-001/37	
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Designated States (Regional): AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

FR 2863175	A1			A61N-001/375	
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US 20050137488	A1			A61B-005/0402	
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Abstract (Basic): EP 1537894 A1

NOVELTY - The device has a receiving unit for receiving and analyzing data related to state of a patient to produce general information and receiving a ventilatory signal representing patient's physiological function. A memory management unit divides a data memory into two zones for storing the information and signal, respectively, when occurrence of an event e.g. apnea, is detected, where storing of the signal is initiated during a time period.

USE - Implantable medical device e.g. pacemaker, cardioverter,

defibrillator or multisite device for providing antibradycardiac and/or
antitachycardiac therapy .

ADVANTAGE - The signal is stored in one zone of the memory, so that
a particular function of the patient can be continuously monitored in
real time. The troubles related to sleep apnea are analyzed by
protecting the integrality of a ventilation-minute signal continuously
for 24 hours or partially during night.

pp; 11 DwgNo 0/0

Title Terms: IMPLANT; MEDICAL; DEVICE; PACEMAKER; THERAPEUTIC; MEMORY;
MANAGEMENT; UNIT; DIVIDE; DATA; MEMORY; TWO; ZONE; STORAGE; INFORMATION;
SIGNAL; TIME; PERIOD; OCCUR; EVENT; DETECT

Derwent Class: P31; P34; S05

International Patent Class (Main): A61B-005/0402; A61N-001/37; A61N-001/375

International Patent Class (Additional): A61N-001/365

File Segment: EPI; EngPI

22/5/10 (Item 10 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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011904431 **Image available**

WPI Acc No: 1998-321341/199828

Related WPI Acc No: 1999-443519

XRPX Acc No: N98-251362

**Implantable anti-arrhythmia device e.g. pacemaker defibrillator -
delivers second anti - arrhythmia therapy when determined that
patient's hear rhythm satisfies second set of criteria**

Patent Assignee: MEDTRONIC INC (MEDT)

Inventor: GRAHAM W A P; PETERSON D K; PRIEVE K A; PETERSON D K L

Number of Countries: 021 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5755737	A	19980526	US 96764865	A	19961213	199828 B
WO 9825669	A1	19980618	WO 97US19032	A	19971020	199830
AU 9748260	A	19980703	AU 9748260	A	19971020	199847
EP 956092	A1	19991117	EP 97911022	A	19971020	199953
			WO 97US19032	A	19971020	
EP 956092	B1	20031001	EP 97911022	A	19971020	200365
			WO 97US19032	A	19971020	
DE 69725339	E	20031106	DE 625339	A	19971020	200381
			EP 97911022	A	19971020	
			WO 97US19032	A	19971020	

Priority Applications (No TypeDate): US 96764865 A 19961213

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 5755737 A 34 A61N-001/362

WO 9825669 A1 E A61N-001/362

Designated States (National): AU CA JP

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC
NL PT SE

AU 9748260 A A61N-001/362 Based on patent WO 9825669

EP 956092 A1 E A61N-001/362 Based on patent WO 9825669

Designated States (Regional): DE FR GB IT NL SE

EP 956092 B1 E A61N-001/362 Based on patent WO 9825669

Designated States (Regional): DE FR GB IT NL SE

DE 69725339 E A61N-001/362 Based on patent EP 956092

Based on patent WO 9825669

Abstract (Basic): US 5755737 A

The device defines a first set of arrhythmia detection criteria. A patient's heart rhythm is monitored. A discriminator determines whether the patient's heart rhythm satisfies the first set of criteria. A first anti-arrhythmia therapy is delivered when determined that the patient's heart rhythm satisfies the first set of criteria. A second set of arrhythmia detection criteria which is less stringent than the first set of criteria is defined.

A patient activation signal is received corresponding to which it is determined whether the patient's heart rhythm satisfies the second set of criteria. A second anti-arrhythmia therapy is delivered when determined that patient's heart rhythm satisfies the second set of criteria.

ADVANTAGE - Enables patient to receive therapy corresponding to requirement quickly and safely. Enhances accuracy and flexibility of device.

Dwg.15/15

Title Terms: IMPLANT; ANTI; ARRHYTHMIC; DEVICE; PACEMAKER; DEFIBRILLATE;
DELIVER; SECOND; ANTI; ARRHYTHMIC; THERAPEUTIC; DETERMINE; PATIENT;
HEARING; RHYTHM; SATISFY; SECOND; SET; CRITERIA
Derwent Class: P34; S05
International Patent Class (Main): A61N-001/362
International Patent Class (Additional): A61N-001/372; A61N-001/39
File Segment: EPI; EngPI

22/5/16 (Item 16 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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008907104 **Image available**
WPI Acc No: 1992-034373/199205
XRAM Acc No: C92-014949
XRPX Acc No: N92-026266

Implantable iontophoretic drug delivery system - has two electrodes positioned adjacent tissue site and connected by leads to power source, pump for supplying medicine, and pulse generator

Patent Assignee: AVITALL B (AVIT-I); AVITAL B (AVIT-I)

Inventor: AVITALL B

Number of Countries: 008 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 468636	A	19920129				199205 B
US 5087243	A	19920211	US 90539611	A	19900618	199209
CA 2044791	A	19911219				199211
EP 468636	B1	19950830	EP 91305522	A	19910618	199539
DE 69112533	E	19951005	DE 612533	A	19910618	199545
			EP 91305522	A	19910618	
CA 2044791	C	19980714	CA 2044791	A	19910617	199839

Priority Applications (No Type Date): US 90539611 A 19900618

Cited Patents: DE 3735137; EP 280564; EP 47013; US 4477971; US 4577642; US 4639244; US 4898585; EP 47013

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
EP 468636	A	10		

Designated States (Regional): AT DE FR GB IT NL

US 5087243	A	7	
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EP 468636	B1 E	10	A61N-001/30
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Designated States (Regional): AT DE FR GB IT NL

DE 69112533	E		A61N-001/30	Based on patent EP 468636
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CA 2044791	C		A61N-001/39
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Abstract (Basic): EP 468636 A

Medicines are applied rapidly to specific tissue sites using an implantable iontophoretic delivery system. This has two electrodes positioned adjacent the tissue site and connected by leads to an electrical power source. The first electrode is adapted to receive, contain and dispense medicine from a stored supply into the tissue under the control of electrical pulses. The second electrode cooperates with the first to cause infusion of the medicine.

A pump is used to supply the desired amt. of medicine from the stored supply. A pulse generator produces the delivery pulses which are fed to the electrodes via a circuit. The medical condition of the tissue is sensed and a controller is used to activate and deactivate the pump and pulse generator in response to the sensed condition.

USE/ADVANTAGE - The iontophoretic device is pref. used in combination with an implanted defibrillator to deliver medicines such as an **antiarrhythmic drug** to an arrhythmogenic site of infarcted heart tissue (claimed). Other drugs include vasodilators or ionotropic drugs. The system maximises the concn. of the drug delivered to the site of interest, and minimises the systemic concn. of the drug, thereby reducing side effects.

Dwg.4/4

Title Terms: IMPLANT; IONTOPHORESIS; DRUG; DELIVER; SYSTEM; TWO; ELECTRODE; POSITION; ADJACENT; TISSUE; SITE; CONNECT; LEAD; POWER; SOURCE; PUMP; SUPPLY; MEDICINE; PULSE; GENERATOR

Derwent Class: B07; P34; S05

International Patent Class (Main): A61N-001/30; A61N-001/39

International Patent Class (Additional): A61N-001/18

File Segment: CPI; EPI; EngPI

?

Set	Items	Description
S1	30	AU=(BOILEAU P? OR BOILEAU, P?)
S2	7	AU=(BARSTAD J? OR BARSTAD, J?)
S3	117	AU=(BORNZIN G? OR BORNZIN, G?)
S4	127	AU=(BRADLEY K? OR BRADLEY, K?)
S5	22	AU=(FALKENBERG E? OR FALKENBERG, E?)
S6	72	AU=(FLORIO J? OR FLORIO, J?)
S7	1	S1 AND S2 AND S3 AND S4 AND S5 AND S6
S8	9	S1:S6 AND (ANTIARRHYTHMI? OR ANTI() (ARRHYTHMI? OR FIBRILLA- TE? OR DYSRHYTHMI? OR TACHYCARDIA?) OR ANTIFIBRILLAT? OR ANTI- DYSRHYTHMI? OR ANTITACHYCARDIA?)
S9	8	S8 NOT S7

? show files

File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)
(c) 2006 JPO & JAPIO

File 350:Derwent WPIX 1963-2006/UD=200644
(c) 2006 The Thomson Corp.

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7/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016735131 **Image available**

WPI Acc No: 2005-059407/200507

XRPX Acc No: N05-051657

Implantable cardiac stimulation device e.g. pacemaker, for patient, has signal generation unit to generate warning signal to alert patient of efficacy problems, and control unit controlling pump to compensate for problems

Patent Assignee: PACESETTER INC (PACE-N); BARSTAD J (BARS-I); BOILEAU P (BOIL-I); BORNZIN G A (BORN-I); BRADLEY K (BRAD-I); FALKENBERG E (FALK-I); FLORIO J J (FLOR-I)

Inventor: BARSTAD J ; BOILEAU P ; BORNZIN G A ; BRADLEY K ; FALKENBERG E ; FLORIO J J

Number of Countries: 034 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1491234	A1	20041229	EP 2004253712	A	20040622	200507 B
US 20040267321	A1	20041230	US 2003608409	A	20030626	200507

Priority Applications (No Type Date): US 2003608409 A 20030626

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 1491234	A1	E	36	A61N-001/00	
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Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR

US 20040267321	A1			A61N-001/362	
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Abstract (Basic): EP 1491234 A1

NOVELTY - The device has a microcontroller with an antiarrhythmic drug efficacy monitoring unit (150) for monitoring efficacy of drugs prescribed to a patient. A warning signal generation unit (154) generates and transmits a warning signal to a bedside monitoring unit for alerting the patient of possible drug efficacy problems. A drug pump control unit controls an optional implantable drug pump to compensate for drug efficacy problems.

USE - Used for implanting within a patient (claimed) to treat arrhythmia e.g. bradycardia and tachyarrhythmia.

ADVANTAGE - The warning signal generation unit automatically and promptly warns the patient of any failure to administer the drugs or any significant change in the efficacy of the drugs, thus eliminating the need for the patient to frequent visit physicians. The drug pump control unit automatically compensates for the possible drug efficacy problem, thereby ensuring optimal dosage to the patient at all times.

DESCRIPTION OF DRAWING(S) - The drawing shows a functional block diagram of internal components of a stimulation device.

Microprocessor (60)

Antiarrhythmic drug efficacy monitoring unit (150)

Cardiac signal analysis unit (152)

Warning signal generation unit (154)

Drug pump control unit (158)

pp; 36 DwgNo 2/12

Title Terms: IMPLANT; CARDIAC; STIMULATING; DEVICE; PACEMAKER; PATIENT; SIGNAL; GENERATE; UNIT; GENERATE; WARNING; SIGNAL; ALERT; PATIENT; PROBLEM; CONTROL; UNIT; CONTROL; PUMP; COMPENSATE; PROBLEM

Derwent Class: P31; P34; S05; W05

International Patent Class (Main): A61N-001/00; A61N-001/362

International Patent Class (Additional): A61B-005/0452; A61N-001/18; A61N-001/30; A61N-001/39

9/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016997062 **Image available**

WPI Acc No: 2005-321378/200533

XRPX Acc No: N05-262808

Implantable stimulation device for delivering multi-chamber stimulation and shock therapy, has microcontroller to determine atrium with higher frequency to be source of atrial flutter, when one signal has higher frequency

Patent Assignee: BOILEAU P (BOIL-I); KIL J (KILJ-I); MIN X (MINX-I)

Inventor: **BOILEAU P** ; KIL J; MIN X

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20050070965	A1	20050331	US 2003674641	A	20030929	200533 B

Priority Applications (No Type Date): US 2003674641 A 20030929

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20050070965	A1	19	A61N-001/362	

Abstract (Basic): US 20050070965 A1

NOVELTY - The device has left and right atrial leads implanted within a patient for providing therapeutic stimulation to respective left and right atria. Sensors (108) provide left and right atrial signals. A microcontroller (60) evaluates frequencies of the signals. The microcontroller determines the atrium with a higher frequency to be a source of an atrial flutter, when one of the signals has the higher frequency.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of determining a source of origin of an atrial flutter event using an implantable stimulation device.

USE - Used for delivering multi-chamber stimulation and shock therapy to a heart of a patient experiencing palpitation and weakness.

ADVANTAGE - The microcontroller determines the atrium with the higher frequency to be the source of the flutter when one of the signals has the higher frequency, thus facilitating targeted delivery of **antitachycardia** pacing therapy to the determined source. The device reduces unnecessary depletion of a battery with unneeded therapy.

DESCRIPTION OF DRAWING(S) - The drawing shows a functional block diagram of an implantable stimulation device.

Microcontroller (60)

Memory (94)

Telemetry circuit (100)

Shocking circuit (116)

Sensors (108)

pp; 19 DwgNo 2/8

Title Terms: IMPLANT; STIMULATING; DEVICE; DELIVER; MULTI; CHAMBER;
STIMULATING; SHOCK; THERAPEUTIC; DETERMINE; ATRIUM; HIGH; FREQUENCY;
SOURCE; ATRIUM; FLUTTER; ONE; SIGNAL; HIGH; FREQUENCY

Derwent Class: P34; S05; T01

International Patent Class (Main): A61N-001/362

File Segment: EPI; EngPI

9/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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016653233 **Image available**

WPI Acc No: 2004-811953/200480

XRPX Acc No: N04-640543

Diastolic function monitoring method in implantable cardiac stimulation device, involves determining relationship between negative peak depolarization amplitudes and ventricular filling times

Patent Assignee: PACESETTER INC (PACE-N)

Inventor: **BRADLEY K**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6810284	B1	20041026	US 2001996306	A	20011121	200480 B

Priority Applications (No Type Date): US 2001996306 A 20011121

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6810284	B1		17	A61N-001/37	

Abstract (Basic): US 6810284 B1

NOVELTY - The relationship between the negative peak depolarization amplitudes which are determined after delivery of ventricular stimulation pulses such as pacing rate, atrial-ventricular (AV) delay, atrial interconduction (A-A) delay, at various ventricular filling times and the ventricular filling times is determined and is compared with the stored value to indicate diastolic function of the heart.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) method for performing diastolic function test in cardiac stimulation device; and

(2) cardiac stimulation device.

USE - For monitoring diastolic function of heart using implantable cardiac stimulation device such as defibrillators, pacemakers e.g. single chamber pacemaker, dual chamber demand-type (DDD) pacemaker during cardiac therapy such as bradycardia pacing, **anti - tachycardia** stimulation, cardioversion shocks or defibrillation shocks.

ADVANTAGE - The diastolic function of the heart can be tracked effectively and the therapy delivery can be adjusted accordingly without using complex software.

DESCRIPTION OF DRAWING(S) - The figure shows the graph explaining the relationship between paced depolarization integral (PDI) and AV delay.

pp; 17 DwgNo 4/7

Title Terms: DIASTOLIC; FUNCTION; MONITOR; METHOD; IMPLANT; CARDIAC; STIMULATING; DEVICE; DETERMINE; RELATED; NEGATIVE; PEAK; DEPOLARISE; AMPLITUDE; VENTRICLE; FILL; TIME

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/37

File Segment: EPI; EngPI

9/5/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016340428 **Image available**

WPI Acc No: 2004-498325/200447

XRAM Acc No: C04-184496

XRPX Acc No: N04-393576

Treatment of atrial fibrillation comprises accessing left atrium with therapeutic device, performing therapy on contractile tissue, and

deploying expandable member to engage and support wall of pulmonary vein

Patent Assignee: FALKENBERG E (FALK-I)

Inventor: **FALKENBERG E**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040116965	A1	20040617	US 2002316488	A	20021211	200447 B

Priority Applications (No Type Date): US 2002316488 A 20021211

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040116965	A1		10	A61N-001/39	

Abstract (Basic): US 20040116965 A1

NOVELTY - Atrial fibrillation is treated by accessing left atrium with therapeutic device, performing therapy on contractile tissue in transitional region between pulmonary vein and left atrium, deploying expandable member to engage and support wall of pulmonary vein within the vein, and removing the therapeutic device while leaving the expandable member in engagement with the pulmonary vein to maintain patency of the vein.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a device for treating atrial fibrillation comprising stent sized to be delivered to left atrium through guide catheter and expandable to engage wall of pulmonary vein between an arrhythmiatic focus and the left atrium, stent delivery catheter for carrying and deploying the stent, and ablation causing agent carried by the stent.

ACTIVITY - **Antiarrhythmic** .

No biological data given.

MECHANISM OF ACTION - None given.

USE - The method is useful for treating of atrial fibrillation.

ADVANTAGE - The invention uses stent deployed within the pulmonary vein to prevent stenosis in the vein.

DESCRIPTION OF DRAWING(S) - The figure is a schematic drawing of the left atrium showing stent delivery catheter being advanced on guide wire.

Heart (10)

Right superior pulmonary vein (14)

Left superior pulmonary vein (16)

Right inferior pulmonary vein (18)

Left inferior pulmonary vein (20)

Mitral valve (22)

Atrial septum (24)

pp; 10 DwgNo 1/4

Title Terms: TREAT; ATRIUM; FIBRILLATE; COMPRISE; ACCESS; LEFT; ATRIUM; THERAPEUTIC; DEVICE; PERFORMANCE; THERAPEUTIC; CONTRACT; TISSUE; DEPLOY; EXPAND; MEMBER; ENGAGE; SUPPORT; WALL; PULMONARY; VEIN

Derwent Class: B07; D22; P34; S05

International Patent Class (Main): A61N-001/39

File Segment: CPI; EPI; EngPI

9/5/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016180571 **Image available**

WPI Acc No: 2004-338458/200431

Related WPI Acc No: 2002-526276

XRPX Acc No: N04-270465

Atrial capture detection and pacing threshold determination method for

implantable cardiac stimulation device e.g. bradychardia stimulation,
involves adjusting atrial simulation pulse energy when retrograde P-wave
is not sensed

Patent Assignee: PACESETTER INC (PACE-N)

Inventor: BORNZIN G A ; LEVINE P A; SHOLDER J A; VALIKAI K

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6721601	B1	20040413	US 2000481085	A	20000111	200431 B
			US 2002102271	A	20020319	

Priority Applications (No Type Date): US 2000481085 A 20000111; US
2002102271 A 20020319

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6721601	B1	13	A61N-001/37		Cont of application US 2000481085 Cont of patent US 6389316

Abstract (Basic): US 6721601 B1

NOVELTY - The method involves detecting retrograde P-waves to
define a detection window for a future P-wave. An atrial simulation
pulse is generated at a predetermined interval prior to the window.
Non-capture and capture are detected when the retrograde P-wave is
sensed and not sensed, respectively during the detection window. Atrial
simulation pulse energy is adjusted when non-capture is detected.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the
following:

(a) an implantable stimulation device

(b) a system for detecting atrial capture and automatically setting
an atrial stimulation pulse energy in an implantable cardiac
stimulation device.

USE - Used for detecting atrial capture and determining pacing
threshold in implantable cardiac stimulation devices e.g. bradychardia
and **antitachycardia** simulation devices, defibrillators and
cardioverters.

ADVANTAGE - The method adjusts the simulation pulses to a level
just above that which is needed to maintain capture, thereby improving
the patients comfort, reducing the necessity of unscheduled visits to
the medical practitioner and greatly increases the simulation devices
battery life by conserving the energy used for the pulses.

DESCRIPTION OF DRAWING(S) - The drawing shows a logic flow diagram
representing an automatic atrial capture verification and atrial acing
threshold determination control program executed by a control system of
a stimulation device.

pp; 13 DwgNo 4/4

Title Terms: ATRIUM; CAPTURE; DETECT; PACE; THRESHOLD; DETERMINE; METHOD;
IMPLANT; CARDIAC; STIMULATING; DEVICE; STIMULATING; ADJUST; ATRIUM;
SIMULATE; PULSE; ENERGY; RETROGRADED; P; WAVE; SENSE

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/37

File Segment: EPI; EngPI

9/5/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014847683 **Image available**

WPI Acc No: 2002-668389/200272

XRPX Acc No: N02-528780

Capture verification review automation system for implantable cardiac

stimulation device, has autocapture unit to perform automatic capture verification to detect presence/absence of cardiac event

Patent Assignee: PACESETTER INC (PACE-N); BORNZIN G A (BORN-I); FLORIO J J (FLOR-I); SNELL J D (SNEL-I); VALIKAI K (VALI-I)

Inventor: BORNZIN G A ; FLORIO J J ; SNELL J D; VALIKAI K

Number of Countries: 027 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1222942	A2	20020717	EP 2002250262	A	20020115	200272 B
US 20020095190	A1	20020718	US 2001764617	A	20010116	200272
EP 1222942	B1	20060621	EP 2002250262	A	20020115	200643

Priority Applications (No Type Date): US 2001764617 A 20010116

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 1222942	A2	E	13	A61N-001/37	
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

US 20020095190	A1			A61N-001/37	
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EP 1222942	B1	E		A61N-001/362	
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Designated States (Regional): CH DE FR IE IT LI

Abstract (Basic): EP 1222942 A2

NOVELTY - An autocapture unit performs automatic capture verification through an implantable stimulation device to detect the presence/absence of a cardiac event. A controller (102) generates a visual representation of the presence/absence of the captured cardiac event. A display screen (108) displays the visual representation to a medical practitioner, to examine and analyze the performance of the verification.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for capture verification review automation method.

USE - For automating review of the capture verification by implantable cardiac stimulation devices e.g. brady-cardia and **anti - tachycardia** implantable stimulation devices, defibrillators, cardioverters, etc.

ADVANTAGE - Facilitates automation of the pacing threshold assessment procedure and capture verification by the stimulation device or the programmer. Enables the programmer to automatically adjust the stimulation device pacing stimulation energy if necessary.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the dual chamber implantable stimulation device.

Controller (102)

Display screen (108)

pp; 13 DwgNo 1/4

Title Terms: CAPTURE; VERIFICATION; REVIEW; AUTOMATIC; SYSTEM; IMPLANT; CARDIAC; STIMULATING; DEVICE; UNIT; PERFORMANCE; AUTOMATIC; CAPTURE; VERIFICATION; DETECT; PRESENCE; ABSENCE; CARDIAC; EVENT

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/362; A61N-001/37

File Segment: EPI; EngPI

9/5/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014705572 **Image available**

WPI Acc No: 2002-526276/200256

Related WPI Acc No: 2004-338458

XRPX Acc No: N02-416454

Atrial capture detection and atrial stimulation pulse energy setting system for implantable cardiac stimulation device, adjusts atrial stimulation pulse energy until atrial capture is detected

Patent Assignee: PACESETTER INC (PACE-N)

Inventor: **BORNZIN G A** ; LEVINE P A; SHOLDER J A; VALIKAI K

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6389316	B1	20020514	US 2000481085	A	20000111	200256 B

Priority Applications (No Type Date): US 2000481085 A 20000111

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6389316	B1	13	A61N-001/368	

Abstract (Basic): US 6389316 B1

NOVELTY - An atrial tracking mode of an implantable stimulation device is switched to a non-atrial tracking mode when an atrial capture assessment is needed. The non-atrial tracking mode is switched back to the atrial tracking mode when atrial capture is present. The atrial stimulation pulse energy is adjusted until the atrial capture is detected by detecting absence of P-waves in a detection window.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for atrial capture detection/atrial stimulation pulse energy setting method.

USE - For implantable cardiac stimulation device including bradycardia and **anti - tachycardia** stimulation devices, defibrillator, pacemaker and cardioverter.

ADVANTAGE - Allows automated dynamic adjustment of the device's atrial pacing stimulus energy if necessary. Does not require use of special dedicated circuitry or special sensors to implement the automated procedures. Employs a bottom-up' adjusting scheme which starts at a low energy level below the expected atrial pacing threshold and increases the energy level until atrial capture is detected, thus saving energy and further avoiding corruption by large polarization signals.

DESCRIPTION OF DRAWING(S) - The figure shows flowchart explaining the automatic atrial capture verification and atrial pacing threshold determination control program.

pp; 13 DwgNo 2/4

Title Terms: ATRIUM; CAPTURE; DETECT; ATRIUM; STIMULATING; PULSE; ENERGY; SET; SYSTEM; IMPLANT; CARDIAC; STIMULATING; DEVICE; ADJUST; ATRIUM; STIMULATING; PULSE; ENERGY; ATRIUM; CAPTURE; DETECT

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/368

File Segment: EPI; EngPI

9/5/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014180132 **Image available**

WPI Acc No: 2002-000829/200201

XRPX Acc No: N02-000611

Implantable cardiac stimulation device e.g. bradycardia pacemaker, allows one atrial stimulation pulse and detects atrial capture, based on absence or presence of P-wave in detection window

Patent Assignee: PACESETTER INC (PACE-N)

Inventor: **BORNZIN G A** ; LEVINE P A; SHOLDER J A; VALIKAI K

Number of Countries: 027 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1116495	A2	20010718	EP 2001300177	A	20010110	200201 B
US 6408210	B1	20020618	US 2000481086	A	20000111	200244
US 6934587	B1	20050823	US 2000481086	A	20000111	200556
			US 2002160732	A	20020603	

Priority Applications (No Type Date): US 2000481086 A 20000111; US 2002160732 A 20020603

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
EP 1116495	A2	E 13	A61N-001/368	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR				
US 6408210	B1		A61N-001/37	
US 6934587	B1		A61N-001/37	Cont of application US 2000481086 Cont of patent US 6408210

Abstract (Basic): EP 1116495 A2

NOVELTY - A controller (30) defines a detection window and detects actual capture, based on presence or absence of P-wave in detection window. The controller triggers pulse generator (16). An adjusting unit adjusts the energy of atrial stimulation pulse generated by the generator (16) to a preset low energy level, if atrial capture is not present and increments the pulse energy level until atrial capture is detected.

USE - Implantable cardiac stimulation device e.g. bradycardia and anti - tachycardia pacemaker, defibrillators, cardioverters to monitor and to stimulate heart patient suffering from cardiac arrhythmia.

ADVANTAGE - As less electrical energy is consumed during testing process, output efficiency is increased and moreover the window observed by control system is not swamped by high output level pulses. Automatically determines proper atrial pacing threshold of patient, without requiring dedicated or special circuitry and/or sensors.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the dual chamber stimulation device.

Pulse generator (16)

Controller (30)

pp; 13 DwgNo 1/4

Title Terms: IMPLANT; CARDIAC; STIMULATING; BRADYCARDIA; PACEMAKER; ALLOW; ONE; ATRIUM; STIMULATING; PULSE; DETECT; ATRIUM; CAPTURE; BASED; ABSENCE; PRESENCE; P; WAVE; DETECT; WINDOW

Derwent Class: P34; S05; T01

International Patent Class (Main): A61N-001/368; A61N-001/37

International Patent Class (Additional): A61N-001/37

File Segment: EPI; EngPI

9/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011525731 **Image available**

WPI Acc No: 1997-502217/199746

XRPX Acc No: N97-418698

Adjustable single-pass implantable cardiac stimulation lead - has atrial sheath which is slidably mounted over ventricular lead body and has atrial electrode which is located on portion of atrial sheath that is adapted to form outwardly extending atrial bow

Patent Assignee: PACESETTER INC (PACE-N)

Inventor: BORNZIN G A ; MORGAN K L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5674274	A	19971007	US 95572590	A	19951214	199746 B

Priority Applications (No Type Date): US 95572590 A 19951214

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5674274	A		12	A61N-001/05	

Abstract (Basic): US 5674274 A

The stimulation lead includes a first section having an atrial electrode and a second section having a ventricular electrode (50). The second section is slidably attached to the first section so that at least a first portion of the first section is slidable, relative to the second section. At least one of the sections has a locking portion that secures them together to prevent sliding of a second portion of the first section relative to the second section.

The locking section permits sliding of the first portion, relative to the second section. the sliding causes a bow to be formed in a bowing portion of the first section. The locking portion comprises a friction fitting that resists the sliding of the second portion of the first section relative to the second section.

USE/ADVANTAGE - E.g. for bradycardia and **antitachycardia** pacemakers, defibrillators and cardioverters. Allows leads to be adjusted to accommodate varying sizes of heart.

Dwg.5/8

Title Terms: ADJUST; SINGLE; PASS; IMPLANT; CARDIAC; STIMULATING; LEAD; ATRIUM; SHEATH; SLIDE; MOUNT; VENTRICLE; LEAD; BODY; ATRIUM; ELECTRODE; LOCATE; PORTION; ATRIUM; SHEATH; ADAPT; FORM; OUTWARD; EXTEND; ATRIUM; BOW

Derwent Class: P34; S05

International Patent Class (Main): A61N-001/05

File Segment: EPI; EngPI

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Set	Items	Description
S1	277	AU=(BOILEAU P? OR BOILEAU, P?)
S2	57	AU=(BARSTAD J? OR BARSTAD, J?)
S3	135	AU=(BORNZIN G? OR BORNZIN, G?)
S4	1307	AU=(BRADLEY K? OR BRADLEY, K?)
S5	52	AU=(FALKENBERG E? OR FALKENBERG, E?)
S6	246	AU=(FLORIO J? OR FLORIO, J?)
S7	0	S1 AND S2 AND S3 AND S4 AND S5 AND S6
S8	1	S1:S6 AND (ANTIARRHYTHMI? OR ANTI() (ARRHYTHMI? OR FIBRILLATE? OR DYSRHYTHMI? OR TACHYCARDIA?) OR ANTIFIBRILLAT? OR ANTI-DYSRHYTHMI? OR ANTITACHYCARDIA?)

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File 155:MEDLINE(R) 1950-2006/Jul 13
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File 73:EMBASE 1974-2006/Jul 14
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File 5:Biosis Previews(R) 1969-2006/Jul W2
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File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
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8/5/1 (Item 1 from file: 5)
DIALOG(R) File 5:Biosis Previews(R)
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0014966669 BIOSIS NO.: 200400337458

Method and apparatus for detecting natural electrical coherence within the heart and for administering therapy based thereon

AUTHOR: **Bornzin Gene A** (Reprint); **Boileau Peter** ; **Florio Joseph J** ;
Poore John W; McClure Kelly H

JOURNAL: Official Gazette of the United States Patent and Trademark Office
Patents 1284 (3): July 20, 2004 2004

MEDIUM: e-file

PATENT NUMBER: US 6766195 PATENT DATE GRANTED: July 20, 2004 20040720

PATENT CLASSIFICATION: 607-14 PATENT ASSIGNEE: Pacesetter, Inc.

PATENT COUNTRY: USA

ISSN: 0098-1133 (ISSN print)

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Techniques are provided for detecting natural electrical coherence within the heart and for administering or adjusting therapy based upon whether natural electrical coherence is detected. In one example, an implantable cardioverter defibrillator (ICD), upon detecting atrial fibrillation, delays administering an atrial defibrillation pulse until a period of natural electrical coherence is detected between the left and the right atria of the heart. The ICD may further delay the pulse until the ventricles of the heart are refractory so as to help prevent triggering ventricular fibrillation. The pulses are administered at a time selected based upon the period of electrical coherence to reduce the amount of electrical energy required within the pulse to reliably defibrillate the heart. Other types of therapy besides defibrillation therapy such as **anti - tachycardia** pacing pulses may also be timed based upon detection periods of natural electrical coherence. Method and apparatus embodiments are described.

DESCRIPTORS:

MAJOR CONCEPTS: Cardiovascular Medicine--Human Medicine, Medical Sciences
; Equipment Apparatus Devices and Instrumentation; Methods and Techniques

METHODS & EQUIPMENT: heart natural electrical coherence detection
apparatus--medical equipment; heart natural electrical coherence
detection method--clinical techniques, diagnostic techniques

CONCEPT CODES:

14506 Cardiovascular system - Heart pathology

?

Set	Items	Description
S1	106785	(ANTIARRHYTHMI? OR ANTI() (ARRHYTHMI? OR FIBRILLATE? OR DYS- RHYTHMI? OR TACHYCARDIA?) OR ANTIFIBRILLAT? OR ANTIDYSRHYTHMI? OR ANTITACHYCARDIA?) (5N) (DRUG OR DRUGS OR AGENT OR AGENTS OR THERAP? OR PHARMACEUT? OR PHARMACOLOG?) OR (CARDIAC? OR MYOCA- RD?) (2N)DEPR
S2	174894	PACEMAKER? OR PACE()MAKER? OR (IMPLANT? OR PROSTHE? OR IND- WELL?) (3N) (CARDIOVER? OR DEFIBRILLAT? OR CARDIOFIBRILLAT? OR - CARDIO()FIBRILLAT? OR PUMP OR PUMPS) OR ICD
S3	4298054	HEART OR CARDIAC? OR CARDIO????? OR ENDOCARD? OR MYOCARD? OR PERICARD?
S4	5512464	SIGNAL? OR OUTPUT?
S5	19140595	STIMULUS OR STIMULI OR STIMULAT??? OR CONTROL?
S6	5499230	CLASS?? OR CLASSIFICATION? OR CLASSIFY OR CLASSIFIE? ? OR - SCHEME? ? OR SCHEMA
S7	856	(VAUGHN OR VAUGHAN) (N)WILLIAMS OR SICILIAN()GAMBIT
S8	12108	S1(5N)S6
S9	982	S2 AND S7:S8
S10	200245	S3(5N)S4
S11	213664	S3(5N)S5
S12	26	S2(S)S7:S8(S)S10:S11
S13	10	RD (unique items)
S14	1	S1 AND S2 AND S4 AND S5 AND S6 AND S7
S15	12568	S1(10N)S6:S7
S16	228	S15 AND S2 AND S10:S11
S17	30732359	DETERMIN? OR ASSIGN? OR ASSESS? OR EVALUAT? OR DETECT??? OR EVALUAT? OR PREDICT? OR GAUG???
S18	590	S17(5N)S7:S8
S19	34	S18 AND S1 AND S2
S20	30	S19 NOT (S12 OR S14)
S21	20	RD (unique items)
S22	978	S1 AND S2 AND S7:S8
S23	36	S1(S)S2(S)S7
S24	36	S23 NOT (S12 OR S14 OR S20)
S25	14	RD (unique items)
S26	14	S15 AND S2 AND S10 AND S11
S27	0	S26 NOT (S12 OR S14 OR S2 OR S24)

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File 99:Wilson Appl. Sci & Tech Abs 1983-2006/Jun
(c) 2006 The HW Wilson Co.
File 34:SciSearch(R) Cited Ref Sci 1990-2006/Jul W2
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14/5/1 (Item 1 from file: 34)
DIALOG(R) File 34:SciSearch(R) Cited Ref Sci
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02096957 Genuine Article#: KA831 Number of References: 26

Title: **EVALUATION OF TRANSESOPHAGEAL CARDIAC PACING TO ANALYZE THE USE-DEPENDENT EFFECT OF ANTIARRHYTHMIC**

Author(s): VERNERO A; CUBA J; LAZZARI JO

Corporate Source: HOSP PIROVANO, DIV CARDIOL, MONROE 3555/RA-1430 BUENOS AIRES//ARGENTINA/; HOSP PIROVANO, DIV CARDIOL, MONROE 3555/RA-1430 BUENOS AIRES//ARGENTINA/

Journal: MEDICINA-BUENOS AIRES, 1992, V52, N4, P303-310

ISSN: 0025-7680

Language: SPANISH Document Type: ARTICLE

Geographic Location: ARGENTINA

Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences

Journal Subject Category: MEDICINE, GENERAL & INTERNAL

Abstract: Use-dependent effect is characteristic of certain **antiarrhythmic drugs**, mainly those included in Group I of **Vaughan - Williams classification**. There is an increasing interest in the study of this phenomenon in order to correlate it with the potential arrhythmogenic effect of currently used **antiarrhythmic drugs**. Use-dependent effect produces widening of the QRS ECG complex as the heart rate is increased. Thus, to produce the necessary changes in heart rate to clinically disclose this phenomenon, endocardial **stimulation** of the right ventricle is usually done both in **control** condition and under the effect of the tested drug. As this is an invasive method, the amount of information collected on this important aspect of the **antiarrhythmic drug** effects has been limited. Hence, we decided to confirm whether transesophageal cardiac pacing is a suitable method to produce **controlled** changes of the heart rate in order to analyse the use-dependent phenomenon. In this study we included 14 patients, 9 women and 5 men aged 47.85 ± 13.91 years and ejection fraction of $54.64 \pm 7.19\%$. Transesophageal **stimulation** was performed up to the Wenckebach point and the previous rate producing 1:1 A-V response was considered. ECG was recorded in an ink-jet three-channel electrocardiograph at 100 mm/sec chart speed and QRS duration was measured. All patients were studied in the basal unsedated state, free of any medication and after the administration of 3.13 ± 0.74 mg/kg of flecainide during 4.07 ± 1.4 days. Atrial capture was obtained with pulses of 15 mA and 18 msec. Heart rate attained before treatment was 150 ± 21.83 bpm and 144.28 ± 19.88 bpm under the effect of flecainide ($p = \text{NS}$) (Table 1). QRS duration changed from 82.14 ± 24.55 msec to 78.92 ± 27.6 msec ($p = \text{NS}$) before treatment and increased from 89.28 ± 33.21 msec to 99.64 ± 34.94 msec ($p < 0.001$) under the effect of flecainide. Hence, we conclude that transesophageal cardiac pacing is a valid non invasive alternative to produce heart rate changes to clinically study the use-dependent effect of **antiarrhythmic drugs**.

Identifiers--KeyWords Plus: SODIUM-CHANNELS; FLECAINIDE; CONDUCTION; EXERCISE; **CLASSIFICATION**; PROCAINAMIDE; TACHYCARDIA; AMIODARONE; LIDOCAINE; FREQUENCY

Research Fronts: 90-0670 003 (UNIFORM ANISOTROPIC CANINE VENTRICULAR MUSCLE; CALCIUM CHANNELS; RABBIT CARDIAC PURKINJE-FIBERS; INITIATION OF REENTRANT ATRIAL ARRHYTHMIAS)

90-2350 001 (TRANSESOPHAGEAL PACING; SUPRAVENTRICULAR TACHYCARDIA; ACCESSORY ATRIOVENTRICULAR PATHWAYS)

90-2374 001 (VENTRICULAR ARRHYTHMIAS; AUTOMATIC **IMPLANTABLE CARDIOVERTER - DEFIBRILLATOR**; **SIGNAL** -AVERAGED ELECTROCARDIOGRAPHIC LATE POTENTIALS; **ANTIARRHYTHMIC DRUGS**)

90-4282 001 (FLECAINIDE ACETATE; ORAL ANTIARRHYTHMIC THERAPY ;
RABBIT CARDIAC PURKINJE-FIBERS)

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21/5/19 (Item 11 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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01025451 Genuine Article#: FP408 Number of References: 283

Title: ANTIARRHYTHMIC DRUG CLASSIFICATIONS - A CRITICAL-APPRAISAL OF THEIR HISTORY, PRESENT STATUS, AND CLINICAL RELEVANCE

Author(s): NATTEL S

Corporate Source: MONTREAL HEART INST,DEPT MED,5000 BELANGER ST E/MONTREAL
H1T 1C8/QUEBEC/CANADA/; MCGILL UNIV,DEPT PHARMACOL &
THERAPEUT/MONTREALH3A 2T5/QUEBEC/CANADA/; MCGILL UNIV,DEPT MED/MONTREAL
H3A 2T5/QUEBEC/CANADA/

Journal: DRUGS, 1991, V41, N5, P672-701

Language: ENGLISH Document Type: ARTICLE

Geographic Location: CANADA

Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences; CC CLIN--
Current Contents, Clinical Medicine

Journal Subject Category: PHARMACOLOGY & PHARMACY

Abstract: Classification of **antiarrhythmic drugs** have developed because of a need to organise the large number of agents available according to pharmacological properties of clinical relevance. The current classification is a hybrid of classification systems developed in the early 1970s. It subdivides drugs according to 4 major pharmacological actions: (a) depression of phase 0 sodium current; (b) antagonism of adrenergic effects on the heart; (c) prolongation of action potential duration; and (d) calcium channel blockade. Further subdivision of sodium channel blockers is based on the kinetics of sodium channel blockade and drug effects on action potential duration.

A critical analysis of selected aspects of the clinical actions of **antiarrhythmic drugs** indicates the value of the current classification, as well as some limitations in its ability to separate drugs into distinct groups with characteristic clinical properties. The strengths of the current classification are due to the clinical importance of the pharmacological properties on which it is based. These results in electrophysiological actions, indications, and adverse effects that are typical for each group of drugs. The limitations of the current system relate to the propensity of individual drugs to have actions of more than one class simultaneously, the way that the various actions of a given drug are dependent on concentration, rate, and tissue type, and to problems in subclass definition.

Some of these shortcomings could be alleviated by returning to the concept, originally put forward by Singh and Vaughan Williams, of classes of drug action rather than classes of drug per se. This approach would be pharmacologically more realistic than trying to **assign** each **antiarrhythmic agent** to a single unique **class**, would be better able to incorporate the complexities of drug action, and would potentially be more flexible. The wide use of **antiarrhythmic drug** classifications attests to their value, and suggests that they are likely to continue to be important in the future.

Identifiers--KeyWords Plus: SUSTAINED VENTRICULAR-TACHYCARDIA; ACUTE MYOCARDIAL-INFARCTION; CANINE CARDIAC PURKINJE; CORONARY-ARTERY DISEASE; PARKINSON-WHITE SYNDROME; **ANTI - ARRHYTHMIC AGENT**; ACCESSORY ATRIOVENTRICULAR PATHWAY; PROGRAMMED ELECTRICAL-STIMULATION; ACTION-POTENTIAL DURATION; LONG-TERM EXPERIENCE

Research Fronts: 89-0880 004 (AUTOMATIC **IMPLANTABLE CARDIOVERTER DEFIBRILLATOR** ; VENTRICULAR ARRHYTHMIAS; SUDDEN CARDIAC DEATH)

89-2064 004 (SINGLE GUINEA-PIG VENTRICULAR MYOCYTES; **ANTIARRHYTHMIC AGENT** ; VOLTAGE-DEPENDENT BLOCK OF CARDIAC SODIUM-CHANNELS)

- 89-3462 002 (AMIODARONE THERAPY; CHRONIC MALIGNANT VENTRICULAR TACHYARRHYTHMIAS; POSSIBLE MARKER FOR LUNG TOXICITY)
 89-4229 002 (ORAL PROPAFENONE; **ANTIARRHYTHMIC DRUG** DIPRAFENONE; VENTRICULAR ARRHYTHMIAS)
 89-2532 001 (ACUTE MYOCARDIAL-INFARCTION; VENTRICULAR ARRHYTHMIAS; SUDDEN CARDIAC DEATH)

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25/5/3 (Item 3 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

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13849572 PMID: 12136604

[Guidelines for antiarrhythmic therapy]

Hagiwara Yoko; Ogawa Satoshi

Cardio-pulmonary Division, Keio University School of Medicine.

Nippon rinsho. Japanese journal of clinical medicine (Japan) Jul 2002,
60 (7) p1278-85, ISSN 0047-1852--Print Journal Code: 0420546

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Subfile: INDEX MEDICUS

Recently, therapies for arrhythmias have been extremely advanced by accumulation of electrophysiological knowledge, improvement of diagnostic technique, and development of antiarrhythmic drugs and devices (pacemakers, catheter ablation and implantable cardioverter-defibrillators). After the report of the CAST (Cardiac Arrhythmia Suppression Trial), the **Sicilian**

Gambit was presented as new strategies of drug therapy. Now in the United States, three AHA guidelines were published. Besides in Japan 'the guidelines for antiarrhythmic drugs' based on the **Sicilian Gambit** was published. 'The guidelines for management of Atrial fibrillation' and 'the guidelines for antiarrhythmic devices' were also reported. Here, these guidelines are reviewed. (11 Refs.)

Descriptors: *Arrhythmia--therapy--TH; *Practice Guidelines; Anti-Arrhythmia Agents--therapeutic use--TU; Atrial Fibrillation--therapy--TH; Catheters, Indwelling; Electrophysiologic Techniques, Cardiac; English Abstract; Humans; Japan; Pacemaker, Artificial; United States

CAS Registry No.: 0 (Anti-Arrhythmia Agents)

Record Date Created: 20020724

Record Date Completed: 20020827

25/5/6 (Item 6 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

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11907975 PMID: 9737653

Interactions between implantable cardioverter-defibrillators and class III agents.

Movsowitz C; Marchlinski F E

Department of Medicine, Allegheny University of the Health Sciences, Hahnemann Hospital, Philadelphia, Pennsylvania 19102-1192, USA.

American journal of cardiology (UNITED STATES) Aug 20 1998, 82 (4A)
p41I-48I, ISSN 0002-9149--Print Journal Code: 0207277

Publishing Model Print

Document type: Clinical Trial; Journal Article; Review

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Although implantable cardioverter-defibrillators (ICDs) can successfully terminate ventricular arrhythmias, antiarrhythmic drugs are often required to prevent recurrent events. Class III antiarrhythmic agents have emerged as the safest, most effective, and widely used agents in the 40-70% of ICD patients who require concomitant antiarrhythmic medication. Antiarrhythmic agents can influence the effectiveness of ICDs to terminate arrhythmias through their effect on defibrillation threshold. All class III agents

share the ability to prolong ventricular refractoriness and those with "pure" class III activity consistently decrease defibrillation threshold in the normal canine heart model. Sotalol, amiodarone, and bretylium all have other **Vaughan Williams** class actions that influence their respective effects on defibrillation threshold. Sotalol has been associated with a decrease in defibrillation threshold in both animal and in clinical studies, whereas amiodarone has been associated with variable effects in animal models and an increase in defibrillation threshold in clinical studies. Additionally, **antiarrhythmic agents** may prolong ventricular tachycardia (VT) cycle length, which may affect the ability to pace terminate or cardiovert VT. Amiodarone has a moderate slowing effect on the VT cycle length. Finally, class III drugs also have proarrhythmic potential that may affect the defibrillator's function. Sotalol can be associated with dose-related torsade de pointes, whereas amiodarone may slow the VT cycle length below the tachycardia detection rate cutoff. In conclusion, class III pharmacotherapy can be safely administered in conjunction with **ICD** therapy as long as the interaction between these therapeutic modalities is appreciated. (60 Refs.)

Descriptors: *Anti-Arrhythmia Agents--classification--CL; *Arrhythmia --therapy--TH; *Defibrillators, Implantable; *Electric Countershock; Amiodarone--therapeutic use--TU; Animals; Anti-Arrhythmia Agents --therapeutic use--TU; Comparative Study; Disease Models, Animal; Dogs; Humans; Sotalol--therapeutic use--TU

CAS Registry No.: 0 (Anti-Arrhythmia Agents); 1951-25-3 (Amiodarone); 3930-20-9 (Sotalol)

Record Date Created: 19980917

Record Date Completed: 19980917

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Set	Items	Description
S1	3946	(ANTIARRHYTHMI? OR ANTI() (ARRHYTHMI? OR FIBRILLATE? OR DYS- RHYTHMI? OR TACHYCARDIA?) OR ANTIFIBRILLAT? OR ANTIDYSRHYTHMI? OR ANTITACHYCARDIA?) (5N) (DRUG OR DRUGS OR AGENT OR AGENTS OR PHARMACEUT? OR PHARMACOLOG?) OR (CARDIAC? OR MYOCARD?) (2N) DEP- RESSANT?
S2	41645	PACEMAKER? OR PACE()MAKER? OR (IMPLANT? OR PROSTHE? OR IND- WELL?) (3N) (CARDIOVER? OR DEFIBRILLAT? OR CARDIOFIBRILLAT? OR - CARDIO()FIBRILLAT? OR PUMP OR PUMPS) OR ICD
S3	1283920	HEART OR CARDIAC? OR CARDIO????? OR ENDOCARD? OR MYOCARD? OR PERICARD?
S4	2296289	SIGNAL? OR OUTPUT?
S5	6660341	STIMULUS OR STIMULI OR STIMULAT??? OR CONTROL?
S6	4466248	CLASS?? OR CLASSIFICATION? OR CLASSIFY OR CLASSIFIE? ? OR - SCHEME? ? OR SCHEMA
S7	2680	(VAUGHN OR VAUGHAN) (N) WILLIAMS OR SICILIAN() GAMBIT
S8	8467833	DETERMIN? OR ASSIGN? OR ASSESS? OR EVALUAT? OR DETECT??? OR EVALUAT? OR PREDICT? OR GAUG???
S9	4	S1(S)S2(S)S7
S10	2	RD (unique items)
S11	672	S1(5N)S6
S12	39	S11(S)S2
S13	37	S12 NOT S9
S14	27	RD (unique items)
S15	94667	S6:S7(5N)S8
S16	153	S2(S)S15
S17	28	S16/2004:2006
S18	123	S16 NOT (S9 OR S13 OR S17)
S19	98	RD (unique items)

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L3	1	dawson.in. and hursta.in. and nappholz.in. and steinhaus.in.	EPO	OR	OFF	2006/07/17 11:12
L4	79	(\$arrhythmi\$ near drug) and (ecg ekg electrocardiogram) and implant\$	US-PGPUB	OR	OFF	2006/07/17 11:18
S1	1	("20040267321").PN.	US-PGPUB; USPAT	OR	OFF	2006/07/13 11:47
S2	27	(peter near boileau) (janice near barstad) (eric near falkenberg)	US-PGPUB; USPAT	OR	OFF	2006/01/20 15:51
S3	136	(gene near bornzin) (gene near a near bornzin)	US-PGPUB; USPAT	OR	OFF	2006/01/20 15:52
S4	77	(joseph near florio) (joseph near a near florio)	US-PGPUB; USPAT	OR	OFF	2006/01/20 15:52
S5	162	S2 S3 S4	US-PGPUB; USPAT	OR	OFF	2006/01/20 15:52
S7	22	((("6,516,219") or ("6,128,534") or ("5,974,341") or ("5,957,957") or ("5,941,831") or ("5,913,879") or ("5,824,020") or ("5,779,645") or ("5,716,382") or ("5,690,682") or ("5,466,254") or ("5,154,171") or ("4,865,036") or ("4,791,936") or ("4,759,366") or ("4,644,954") or ("4,596,255") or ("4,399,820") or ("5,605,159") or ("5,817,131") or ("20020077620") or ("20030078632"))).PN.	US-PGPUB; USPAT	OR	OFF	2006/01/20 16:23
S9	594	((600/515) or (600/518)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/20 16:30
S10	331	(607/3).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/20 16:36
S11	144	S9 and drug	US-PGPUB; USPAT	OR	OFF	2006/01/20 16:42
S12	200	S10 and drug	US-PGPUB; USPAT	OR	OFF	2006/01/20 16:46
S16	1	("2004/0093034").URPN.	USPAT	OR	OFF	2006/01/20 16:50
S19	38	("5002067" "5244460" "5324325" "5385148" "5387419" "5405376" "5431649" "5447533" "5527344" "5531780" "5551427" "5575814" "5609151" "5634895" "5661133" "5693622" "5697951" "5833715").PN. OR ("6086582").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/01/20 17:06

EAST Search History

S20	3598	((607/5) or (607/9) or (607/14) or (607/17) or (607/25) or (607/26) or (607/30) or (607/31) or (607/123)). CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:07
S21	861	S20 and drug	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:07
S22	484	S20 and drug and arrhythmia	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:30
S25	225	((607/7) or (607/8)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:30
S26	31	S25 and drug	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:40
S27	126	(S9 S11 S20 S25) and (quinidine lidocaine sotalol ibutilide procainamide)	US-PGPUB; USPAT	OR	OFF	2006/01/20 18:26
S28	1	("5,893,881").PN.	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:50
S29	1	("20030153951").PN.	US-PGPUB; USPAT	OR	OFF	2006/01/20 17:50
S32	0	("2003/0109902").URPN.	USPAT	OR	OFF	2006/01/20 17:55
S33	1	("2002/0188327").URPN.	USPAT	OR	OFF	2006/01/20 18:04
S34	178	(607/63).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/20 18:25
S35	28	S34 and drug	US-PGPUB; USPAT	OR	OFF	2006/01/20 18:05
S36	61	(S9 S11 S20 S25) and (drug same class)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:20
S37	0	("2005/0256543").URPN.	USPAT	OR	OFF	2006/01/20 18:27

EAST Search History

S38	57	(US-20020077620-\$ or US-20020077673-\$ or US-20020133196-\$ or US-20020173727-\$ or US-20020188327-\$ or US-20030050566-\$ or US-20030078632-\$ or US-20030109902-\$ or US-20030144701-\$ or US-20030153951-\$ or US-20030208236-\$ or US-20030212436-\$ or US-20030233128-\$ or US-20040015190-\$ or US-20040064062-\$ or US-20040093034-\$ or US-20040172066-\$ or US-20040215254-\$ or US-20040267321-\$ or US-20050033368-\$).did. or (US-4399820-\$ or US-4596255-\$ or US-4644954-\$ or US-4759366-\$ or US-4791936-\$ or US-4865036-\$ or US-5154171-\$ or US-5330508-\$ or US-5405362-\$ or US-5466254-\$ or US-5474574-\$ or US-5527344-\$ or US-5605159-\$ or US-5690682-\$ or US-5716382-\$ or US-5779645-\$ or US-5817131-\$ or US-5824020-\$ or US-5893881-\$ or US-5913879-\$ or US-5925066-\$ or US-5941831-\$ or US-5957957-\$ or US-5974341-\$ or US-6086582-\$ or US-6128534-\$). did. or (US-6144878-\$ or US-6351672-\$ or US-6358247-\$ or US-6516219-\$ or US-6571121-\$ or US-6571122-\$ or US-6748272-\$ or US-6845267-\$ or US-6941168-\$ or US-6968226-\$ or US-6968232-\$). did.	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:11
S39	1	S38 and (drug near class)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:11
S40	594	((600/515) or (600/518)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:20
S41	144	S40 and drug	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:20
S42	3598	((607/5) or (607/9) or (607/14) or (607/17) or (607/25) or (607/26) or (607/30) or (607/31) or (607/123)). CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:20
S43	225	((607/7) or (607/8)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:20

EAST Search History

S44	33	(S40 S41 S42 S43) and (drug with class)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:21
S45	2021	cardiac and (drug with class)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:21
S46	3	cardiac and (drug near class) and ((antiarrhythmia \$4arrhythmia) near drug)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:22
S47	174	cardiac and (drug near class) and (antiarrhythmia \$4arrhythmia)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:28
S48	40	S38 and defibrillation	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:52
S49	6	S38 and (time near day)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:58
S50	3	S38 and (averag\$3 near signal)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:59
S51	10	S38 and (averag\$3 with signal)	US-PGPUB; USPAT	OR	OFF	2006/01/22 17:59
S52	358	(607/3).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/07/12 15:36
S53	4717	((604/424) or (604/514) or (607/22) or (607/7) or (607/8) or (607/5) or (607/14) or (607/17) or (607/25) or (607/26) or (607/9) or (607/30) or (607/31) or (607/123) or (600/518) or (600/515)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/07/13 10:03
S54	81	(S52 S53) and (\$5arrhythmi\$1 near drug)	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:44
S55	1	("6,511,500").PN.	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:04
S56	728	(\$5arrhythmi\$1 near drug)	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:05
S57	362	(\$5arrhythmi\$1 near drug) and implant\$7 and stimulat\$6	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:20
S58	21	(\$5arrhythmi\$1 near drug) and implant\$7 and stimulat\$6 and (drug near (class\$6 type\$1 categor\$3))	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:43
S59	1466	((600/510) or (607/6) or (600/508) or (607/27)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:44
S60	10	S59 and (\$5arrhythmi\$1 near drug)	US-PGPUB; USPAT	OR	OFF	2006/07/12 16:45
S61	129	514/821.ccls. and (ecg ekg electrocardiogram)	US-PGPUB; USPAT	OR	OFF	2006/07/13 11:48
S63	1769	((424/9.1) or (424/9.2)).CCLS.	US-PGPUB; USPAT	OR	OFF	2006/07/13 11:49

EAST Search History

S64	63	S63 and (ecg ekg electrocardiogram)	US-PGPUB; USPAT	OR	OFF	2006/07/13 15:52
S65	363	(\$5arrhythmi\$1 near drug) and implant\$7 and stimulat\$6	US-PGPUB; USPAT	OR	OFF	2006/07/13 16:04
S66	94	S65 and (ecg ekg electrocardiogram)	US-PGPUB; USPAT	OR	OFF	2006/07/13 15:53
S67	125	(\$5arrhythmi\$1 near drug) and implant\$7 and (ecg ekg electrocardiogram)	US-PGPUB; USPAT	OR	OFF	2006/07/14 12:28
S68	0	(\$5arrhythmi\$1 near drug) and implant\$7 and (ecg ekg electrocardiogram)	EPO; JPO	OR	OFF	2006/07/14 12:35
S69	0	(\$5arrhythmi\$1 near drug) and (ecg ekg electrocardiogram)	EPO; JPO	OR	OFF	2006/07/14 12:35
S70	2	drug and implant\$7 and (ecg ekg electrocardiogram)	EPO; JPO	OR	OFF	2006/07/14 12:37
S71	10	drug and (ecg ekg electrocardiogram)	EPO; JPO	OR	OFF	2006/07/14 12:37